# THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—LANCET, WESTRAND LONDON TELEPHONE NUMBER—GERRARD 5356

No. III. of Vol. I., 1920.
No. 5029. Vol. CXCVIII. LONDON, SATURDAY, JANUARY 17, 1920. Pp. 128—Price 10d.



## J. & A. CHURCHILL'S NEW BOOKS.

MANUAL OF OBSTETRICS. For the Use of Students and Junior Practitioners. By O. St. John Mosse, M.D., F.R.C.S. With 136 Illustrations. 21s. net, postage 6d.

THE MEDICAL DIRECTORY, 1920. 24s. net, postage 9d.

TRANSACTIONS OF THE OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM. Session 1919. With List of Officers, Members, &c. Volume XXXIX. 12s. 6d. net, postage 6d.

MODERN SPIRITISM, Its Science & Religion. By A. T. Schofield, M.D., Vice President, Victoria Institute, &c. 3s. 6d. net, postage 3d.

MINOR SURGERY AND BANDAGING. By Gwynne Williams, M.S., F.R.C.S. 17th Ed. HEATH. 239 Illus. 10s. 6d. net, postage 6d.

EDEN'S MANUAL OF MIDWIFERY. 5th Edition. With 5 Plates (4 in Colour), 259 Text-figures. 24s. net, postage 9d.

London: J. & A. Churchill, 7, Great Marlborough-street, W. 1.

Price 12s. net. Post free (inland), 18s. 9d.

NINETEENTH EDITION (REPRINTED).

## SQUIRE'S COMPANION.

"SQUIRE'S COMPANION is a work of great practical value to medical practitioners, as well as to pharmaceutical chemists, dispensers, and pharmacologists."—The British Medical Journal.

Published by J. & A. Churchill, 7, Great Marlborough-st., London, W. 1.

Demy 8vo. 3s. net, postage 4d.

## A NEW TREATMENT FOR GONORRHŒA.

By CHARLES RUSS, M.B.Lond., M.R.C.S.,
Physician-in-Charge Electro-therapeutic Department, Male Lock Hospital, London.

"This form of treatment merits further attention, as it is both scientific and ingenious."—British Medical Journal.

"We welcome this small work as pointing to a distinct advance in our efforts to master a disease so often belittled but which may have most dire results."—Medical Press and Circular.

London: H. K. Lewis & Co. Ltd., 136 Gower-street, W.C. 1.

This day. Crown 8vo. With 193 Illustrations. 12s. 6d. net.

## FRACTURES, COMPOUND FRACTURES, DISLOCATIONS, and THEIR TREATMENT.

With a Section on AMPUTATIONS and ARTIFICIAL LIMBS.

By JOHN A. C. MACEWEN, M.B., C.M., B.Sc.,
Capt. R.A.M.C. (T.F.), à la suite Surgeon, Senior Assistant to the Regius Professor of Surgery in the University of Glasgow.

Glasgow: Maclehose, Jackson & Co., Publishers to the University.
London: Macmillan & Co., Ltd.

## OXFORD MEDICAL PUBLICATIONS.

SYPHILIS IN CHILDHOOD.

By LEONARD FINDLAY, M.D., D.Sc., F.R.F.P.S.G.,
Lecturer on Medical Diseases of Infancy and Childhood, Glasgow University; Visiting Physician, Royal Hospital for Sick Children, Glasgow; Director of Child Welfare, League of Red Cross Societies.
Crown 8vo. Cloth. Fully Illustrated, with 6 Colour Plates.
Price 8s. 6d. net.
Henry Frowde and Hodder & Stoughton, 17, Warwick-square, Newgate-street, London, E.C. 4.

## NERVE INJURIES and their TREATMENT.

By Sir JAMES PURVES STEWART, K.C.M.G., C.B.,
Senior Physician to the Westminster Hospital; and
ARTHUR EVANS, M.S., F.R.C.S.,
Surgeon and Lecturer on Surgery to the Westminster Hospital.

Second Edition. Revised and Enlarged. The most recent work on the subject. Demy 8vo. Cloth. Pages 212. With 137 Illustrations.
Price 12s. 6d.
Henry Frowde, Hodder & Stoughton,
17, Warwick-square, Newgate-street, London, E.C. 4.

Second Edition, Enlarged. Crown 8vo. 7s. 6d. net.
With 31 original Photographs and 150 special Prescriptions.

## TREATMENT OF DISEASES OF THE SKIN.

By KNOWSLEY SIBLEY, M.D. Camb.
London: Edward Arnold, 41 and 43, Maddox-street, W. 1.

Just Published. Sixth Edition. Crown 8vo, Cloth, 561 pp. Thoroughly revised, and containing Chapters on Medical Diseases of the War.
12s. net, postage 6d.

## WHEELER'S HANDBOOK OF MEDICINE.

By W. R. JACK, M.D., F.R.F.P. & S.G.,
Physician, Glasgow Royal Infirmary; Lecturer, Clinical Medicine, University of Glasgow.
E. & S. Livingstone, 17, Teviot-place, Edinburgh.

Demy 8vo. 86 + viii. pp. 5s. 6d. net; postage 4d.

## HALF A CENTURY OF SMALLPOX AND VACCINATION.

Being the Milroy Lectures delivered before the Royal College of Physicians of London in March, 1919, and revised for publication.
By JOHN C. McVAIL, M.D., LL.D.
E. & S. Livingstone, 17, Teviot-place, Edinburgh.

Now Ready. Pp. xi. + 269. With 3 Charts. 5s. net.

## ON ALCOHOLISM: Its Clinical Aspects and Treatment.

By Francis Hare, M.D., Medical Superintendent of the NORWOOD SANATORIUM, Beckenham.

"Marked by candour, common sense, and moderation ..... likely to become the standard text-book."—British Medical Journal.
London: J. & A. Churchill, 7, Great Marlborough-street.

By LESLIE THORNE THORNE, M.D., B.S., &c.

## NAUHEIM TREATMENT in ENGLAND of DISEASES of the HEART and CIRCULATION.

Fifth Edition. Enlarged and re-written, much new matter. Price 5s. net.
Pp. vi. + 160. With 27 Photographs of RESISTANCE-Exercises and 65 other Illustrations. Polygraphs, &c.

"It is the best and most practical work on the subject."
—West London Medical Journal.
Baillière, Tindall & Cox, 8, Henrietta-st., Covent Garden, London, W.C.

## BY H. WANSEY BAYLY, M.C.

VENEREAL DISEASE: ITS PREVENTION, SYMPTOMS, AND TREATMENT.
Just Published. Pp. viii. + 152. 54 Illustrations. Price 10s. 6d.
J. & A. Churchill, 7, Great Marlborough-street, London.

CLINICAL PATHOLOGY OF SYPHILIS AND PARASYPHILIS.
Pp. xiv. + 194. 23 Illustrations. Price 5s.
Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden, London.

Second Edition

## GRAVES' GYNECOLOGY

Thoroughly Revised

*"A new and magnificent volume on Gynecology has emanated from the Harvard School of Medicine, from the pen, and as regards the illustrations in greater part also from the brush, of the professor of gynecology. Both Professor Graves himself and the school are to be heartily congratulated on an achievement which is well worthy of the best traditions of its historic birthplace. ..... The book is freely and handsomely illustrated throughout, mainly from the author's own drawings of his own specimens. Professor Graves is to be envied for his facility and congratulated on his ability as an artist. We again most heartily and unreservedly congratulate Professor Graves."*—British Medical Journal.

Gynecology: Medical and Surgical. By William P. Graves, M.D., Professor of Gynecology at Harvard Medical School. Octavo of 885 pages, with 491 original illustrations, 103 in colours. Cloth, 35s. net.

Sent, Carriage Paid, on Receipt of Price.

SAUNDERS PUBLISHERS

9, Henrietta Street, London, W.C. 2.

# A BRITISH REMEDY

## FOR BACILLARY AND COCCIGENIC INFECTIONS

OF THE RESPIRATORY ORGANS.

**PROPHYLACTIC, THERAPEUTIC &**

**WONDERFULLY DEMULCENT.**

THE SAFEST AND BEST LOZENGE TO PRESCRIBE FOR PATIENTS SUFFERING FROM AND SUBJECT TO ANY AFFECTIONS OF THE MOUTH & PHARYNX.

**EDWARD COOK & CO. Ltd. (Disinfectant Specialists), Bow, London, E.3.**

# Valentine's Meat-Juice

For **Quieting** the **Irritable Stomach**, for **Aiding** the **Digestion** and for **Sustaining** and **Strengthening**, **Valentine's Meat-Juice** is **Extensively Employed** in the treatment of

**Phthisis.**

**Dr. Gouel**, *Physician in Chief of the Villepinte Hospital for Consumption, Paris, France:* "VALENTINE'S MEAT-JUICE succeeds well in cases of Anæmia and in the treatment of Tuberculosis in an advanced stage when the stomach is intolerant."

**Dr. Pietro Borromeo**, *Physician and Surgeon of the Hospital of Rome, Italy:* "I have tried VALENTINE'S MEAT-JUICE in the Tuberculosis Division of the Hospital of the Holy Spirit, and have proved the great advantages that it renders for the nutrition of the consumptive. Pleasant to the taste of the most fastidious of the sick, it does not irritate the stomach; but stimulates the peptogastric functions so as to improve notably the appetite, even in cases of continuous and high fever and of extreme loss of strength."

For sale by European and American Chemists and Druggists.

**VALENTINE'S MEAT-JUICE COMPANY,**
RICHMOND, VIRGINIA, U. S. A.

D 186

# THE LANCET.

No. 5029. LONDON, SATURDAY, JANUARY 17, 1920. Vol. CXCVIII.


## CONTENTS.

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.


**AN ADDRESS** on the Application of War Methods to Civil Practice. Delivered before the Clinical Section of the Royal Society of Medicine on Jan. 9th, 1920. By Sir ANTHONY BOWLBY, K.C.B., K.C.M.G., K.C.V.O., Surgeon - in - Ordinary to H.M. the King, &c..... 131

**BRADSHAW LECTURE** on the Surgery of the Heart. Delivered before the Royal College of Surgeons of England, by Sir CHARLES BALLANCE, K.C.M.G., C.B., M.V.O., M.S.Lond., F.R.C.S. Eng., Consulting Surgeon to St. Thomas's Hospital, &c.—Part III. (*Concluded*)..... 134

### ORIGINAL ARTICLES.

Treatment of Malunion in Fractures of the Femur. By W. ETHERINGTON WILSON, M.R.C.S., L.R.C.P. Lond., Medical Officer, I/C Femur Wards, 1st London General Hospital. Introduction by Sir ANTHONY BOWLBY, K.C.B., K.C.M.G., K.C.V.O., F.R.C.S. Eng., Temp. Major - General, A.M.S.—(*Illustrated*)..... 139

The Meaning of Tachycardia. By R. MCNAIR WILSON, M.B., Ch.B. Glasg. (Read before the Fellowship of Medicine.)—(*Illustrated*)..... 146

Dislocation of Cervical Spine. Reduction under Anæsthesia. By J. PHILIP BUCKLEY, M.D. Cantab., M.S. Lond., F.R.C.S. Eng.—(*Illustrated*)..... 149

A Calculus of Unusual Size Removed from the Ureter by Operation. By FRANK KIDD, F.R.C.S. Eng., Surgeon to, and Surgeon in Charge of, the Genito-Urinary Department, London Hospital.—(*Illustrated*)..... 150

Diverticulitis. Being some Remarks made in the Course of a Discussion at a Meeting of the Section of Surgery (Subsection of Proctology), Royal Society of Medicine, on Jan. 7th. By G. GREY TURNER, M.S. Durh., F.R.C.S. Eng., Hon. Assistant Surgeon, Royal Infirmary, Newcastle - on-Tyne..... 151

### CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A Case of Acute Hydropneumothorax Communicating with the Stomach. By J. W. TUDOR THOMAS, M.B., B.S. Lond., M.R.C.S., Captain, R.A.M.C. (S.R.)..... 152

Case of Sudden Complete Procidentia Recti in a Young Adult Male. By W. R. M. TURTLE, M.B., B.S. Lond., D.P.H., Senior Assistant Medical Officer, Whipps Cross Infirmary, London, N.E..... 153

### MEDICAL SOCIETIES.

Royal Society of Medicine: Clinical Section..... 153
Section of Surgery: Subsection of Proctology.. 154
Subsection of Orthopædics..... 156

Pathological Society of Great Britain and Ireland..... 157

### REVIEWS AND NOTICES OF BOOKS.

War Diseases and Pensions. By R. M. Wilson, M.B., Ch.B.; and W. M. T. Wilson, M.B., Ch.B..... 158

A Handbook of Gynæcology. By Bethel Solomons, B.A., M.D. Dub., F.R.C.P. Irel. ... 158

Neoplastic Diseases. A Textbook on Tumours. By James Ewing, A.M., M.D., Sc.D..... 158

La Rachianesthésie Générale. By Professor Thoma's Jonnesco..... 159

A Complete System of Nursing. By A. Millicent Ashdown..... 159

Parasitology..... 159

The Journal of Pathology and Bacteriology..... 160

### LEADING ARTICLES.

THE EPIDEMIOLOGY OF ACCIDENTS.—(*Illustrated*)..... 161

LESSONS FROM THE FLEXNER BACILLUS..... 162

INFECTIOUS DISEASE AND THE PUBLIC VIEW..... 162

THE PRIVACY OF VENEREAL CLINICS..... 163

### ANNOTATIONS.

Investigations with a Large Quantity of Radium..... 164

The Surgery of the Pituitary: Victor Horsley's Work..... 164

The Incidence of Cancer Mortality..... 165

The Correlation of Eggs and Nests..... 165

Latent Malaria..... 165

Hibernation of House-flies..... 166

Medical Sickness, Annuity, and Life Assurance Friendly Society..... 166

The "Schweizerische Medizinische Wochenschrift"... 166

The Rat Hunt..... 167

### INDEX.

VOL. II., 1919..... iii.–xx.

TITLE-PAGE.

### SPECIAL ARTICLES.

Medical Practice in Bolshevist Hungary..... 168

Ireland: The Irish Medical Committee and the Irish Public Health Council.—The Humane Slaughtering of Animals.—Accidental Shooting of a Medical Man 168

Australia: New Health Bill.—The Custody of a Child.—University of Sydney..... 169

Paris: Recrudescence of Influenza.—Encephalitis Lethargica.—Microbic Defence against Infection.—Rectal Injections of Bile for Constipation..... 170

The Fellowship of Medicine.. 170

### CORRESPONDENCE.

Venereal Disease and Professional Secrecy (Mr. C. F. Marshall)..... 171

Medical Men in Parliament (Dr. N. Howard Mummery) 171

Subcutaneous Emphysema in Parturition (Dr. J. W. Craw) 171

A Saying of Dr. Gee's (Sir Thomas Horder)..... 171

"The Justifiability of Therapeutic Lying" (Dr. Ivo Geikie Cobb)..... 171

"Mind and its Disorders" (Dr. W. H. B. Stoddart)..... 172

The Problem of Venereal Disease..... 172

Survival of Quadruplets (Mr. Dennis Vinrace)..... 178

Metric Prescribing (Dr. W. Wright Hardwicke)..... 178

Wanted—an Appointment..... 178

### MEDICAL NEWS.

The Increase of Medical Fees 170

Bristol Dispensary..... 172

University of Cambridge: Diploma in Radiology and Electrology..... 173

University of Liverpool..... 173

King's College (University of London): Psychological Department..... 173

King's College Hospital (University of London): Post-Graduate Instruction in Syphilis..... 173

The Scientific and Industrial Research Department..... 173

Literary Intelligence..... 173

Royal Microscopical Society.. 173

A State Medical Service..... 173

People's League of Health..... 173

High Birth-rate in Norwich... 173

Royal College of Surgeons of England..... 173

Kent Local Medical and Panel Committees..... 174

St. Mary's Hospital Medical School Dinner..... 174

Cheltenham Reunion Dinner 174

Great Northern Central Hospital..... 174

St. Thomas's Hospital Old Students' Dinner..... 174

Hospital Accommodation in Birmingham..... 174

British Federation of Medical and Allied Societies..... 175

URBAN VITAL STATISTICS:

English and Welsh Towns.. 172

Scotch Towns..... 172

Irish Towns..... 172

### THE SERVICES.

Army Medical Service..... 175

Royal Army Medical Corps.... 175

Royal Air Force..... 175

India and the Indian Medical Service..... 175

Commissions in the Army for Dentists..... 175

### NOTES, SHORT COMMENTS, &c.

Two East - End Hospital Appeals..... 178

The Human Bellows..... 178

Acknowledgments of Communications received..... 175

Medical Diary..... 176

Appointments..... 177

Vacancies..... 177

Births, Marriages, and Deaths 177

Books, &c., received..... 177



## JOHN BALE, SONS & DANIELSSON, Ltd.

**THE PANEL DOCTOR: His Duties and Perplexities.** By T. M. TIBBETTS, M.D., M.R.C.S., L.R.C.P., D.P.H. Second Edition. The First Edition was exhausted in a few weeks. Crown 8vo. 68 pp. **2s. 6d.** net, postage 3d.

**RURAL WATER SUPPLIES AND THEIR PURIFICATION.** By ALEXANDER CRUIKSHANK HOUSTON, K.B.E., M.B., Director of Water Examination, Metropolitan Water Board. Demy 8vo. 152 pp. Cloth. **7s. 6d.** net, postage 6d.

**THE ANIMAL PARASITES OF MAN.** By H. B. FANTHAM, M.A.Cantab., J. W. W. STEPHENS, M.D. Cantab., and F. V. THEOBALD, M.A.Cantab. Royal 8vo. Cloth, pp. 932. 423 Illustrations, **45s.** net, postage 9d. inland.

**DEFENSIVE FERMENTS OF THE ANIMAL ORGANISMS against Substances out of Harmony with the Body, the Blood-plasma, and the Cells.** Translated by J. GAVRONSKY, L.R.C.P., and W. F. LANCHESTER, M.A. **7s. 6d.** net, postage 4d.

**THE SCIENCE AND ART OF DEEP BREATHING as a Prophylactic and Therapeutic Agent in Consumption.** By S. OTAKE, M.B. Tokio. **5s.** net, postage 4d.

**EPIDEMIC INFANTILE PARALYSIS (Heine-Medin Disease).** By Prof. PAUL H. ROMER. Translated by H. RIDLEY PRENTICE, M.B. Royal 8vo. Cloth. Price **7s. 6d.** net, postage 5d.

**LOCAL ANÆSTHESIA: An Illustrated Text-Book for Students and Practitioners.** 2nd Impression. **8s. 6d.** net, postage 6d.

**ORTHOPÆDICS IN MEDICAL PRACTICE.** By Prof. ADOLF LORENZ and D. ALFRED SAXL. Translated by L. C. PEEL RITCHIE, M.D. With 39 Illustrations. Demy 8vo. Cloth, lettered. 7s. 6d. net, postage 4d.

**A GUIDE TO THE USE OF TUBERCULIN.** By ARCHER W. R. COCHRANE, M.B. Lond., and CUTHBERT A. SPRAWSON, M.D. Crown 8vo. Cloth. **5s.** net, postage 4d

**83, 85, 87, 89, & 91, GREAT TITCHFIELD ST., OXFORD ST., LONDON, W. 1.**

## ESSAYS ON THE SURGERY OF THE TEMPORAL BONE.

By Sir CHARLES A. BALLANCE, K.C.M.G., C.B., M.V.O., M.S., F.R.C.S., Consulting Surgeon to St. Thomas's Hospital, &c.

*Illustrated by 125 Plates (40 in Colour) and 120 Figures. In 2 Volumes. Medium 4to.* Price 5 guineas.

MACMILLAN & CO.

Price 1s. With Illustrations

## APPLICATION OF TRUSSES

to HERNIÆ. Clinical Lecture delivered at King's College Hospital. By the late JOHN WOOD, F.R.S., Senior Surgeon to King's College Hospital. Reprinted from "Medical Examiner."

London: Matthews Brothers, 10, New Oxford-street, W.C.

NOW READY. THIRD EDITION

## HYGIENE AND PUBLIC HEALTH

WITH SPECIAL REFERENCE TO THE TROPICS.

By **B. N. GHOSH,** F.R.F.P.S. (Glasg.), Fellow of the Royal Society of Medicine; and

**J. L. DAS,** L.M.S. (Cal.), Health Officer of Maniktala, Calcutta.

WITH AN INTRODUCTION BY

Col. K. McLEOD, M.D., LL.D., I.M.S. (ret.), Hon. Phys. to H.M. the King.

Crown 8vo. Full Cloth. Pp. xvi.+397. Price Rs.4/8 or 6s. net.

INDIAN MEDICAL GAZETTE: "We can strongly recommend this volume as an admirable text-book."

Publishers: HILTON & CO., P.O. Box 801, Calcutta, India.

London Agents: Simpkin & Marshall, Stationers' Hall, E.C. 4.

## STAMMERING, SPEECH DEFECTS, VOICE TRAINING.

BEHNKE METHOD. Est. 1882.

Carried on by Miss BEHNKE, 39, Earl's Court-square, S.W. 5.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—*The Times.*

"Thoroughly physiological principles."—*The Lancet.*

"The method is scientifically correct and perfectly effective."—*Guy's Hospital Gazette.*

*From a Harley Street Specialist.* "The condition is to a great extent a psychical one, and the admirable results obtained by yourself and your parents have in my opinion been to a great extent due to your personal psychical influence over your subject. You are at liberty to use this expression of my opinion." *(This letter may be seen.)*

"Stammering: Cleft Palate Speech: Lisping." 1s. 3d. post free.

Of Miss BEHNKE, 39, Earl's Court-square, S.W. 5.

## STAMMERING

**W. J. KETLEY, "Tarrangower," Brondesbury, N.W.**

(30 years colleague of late B. BEASLEY, Brampton Park, Huntingdon.)

Those interested in the subject should write for his book, which will be sent post free.

## STAMMERING

MOST SUCCESSFULLY TREATED.

RESIDENT AND DAILY PUPILS.

PROSPECTUS AND MEDICAL OPINIONS POST FREE FROM

**Mr. A. C. SCHNELLE,**

Estd. 1905.] 119, Bedford Court Mansions, London W.C.

## CAPSICUM "GAMGEE TISSUE."

Sole Proprietors and Manufacturers:

**ROBINSON & SONS, Limited,** Chesterfield.

## RADIUM

Pure Radium Salts for Therapeutics Produced and Sold by

J. S. MACARTHUR LTD., RADIUM WORKS, BALLOCH

## MICROSCOPES

SPECTROSCOPES BOUGHT, SOLD, or EXCHANGED.

JOHN BROWNING (Dept. 7), 146, Strand, London, W.C. 2. Estab. 1765

## VACCINES

AUTOGENOUS, STOCK, AND DETOXICATED.

*In bulk or in graduated doses.*

Apply, SECRETARY,

**LABORATORIES OF PATHOLOGY & PUBLIC HEALTH,**

6, HARLEY STREET, LONDON, W. 1.

## DR. CHAUMIER'S GLYCERINATED AND REINFORCED CALF LYMPH.

THE CHEAPEST AND MOST ACTIVE LYMPH.

PREPARED under the MOST MINUTE ANTISEPTIC PRECAUTIONS.

Supplied in Tubes, sufficient to vaccinate 1 or 2 persons, at 8d. each; 10 persons at 1s. 3d. each, 25 persons at 2s. 3d. each. Collapsible tubes for 40 vaccinations 3s. 9d. each. Postage and packing 2d. each extra.

**ROBERTS & CO., 76, New Bond St., LONDON, W**

Prepared strictly in accordance with the methods advocated by Dr. S. Monckton Copeman, F.R.S.

## JENNER INSTITUTE

ASEPTIC GLYCERINATED

## CALF LYMPH

Tubes, 1s. each, 10s. per dozen. Postage 2d.

Half Tubes, 3 for 1s. 6d., 5s. per dozen. ,, ,,

*Telegrams: "Silicabon, London." Telephone No. 1347 Battersea.*

Postal Orders and Cheques to be made payable to JAMES DOUGLAS.

**JENNER INSTITUTE FOR CALF LYMPH,**

73, Church Rd., Battersea, London, S.W. LTD.

## STUDENTS who desire to ECONOMISE

will be interested in the NEW BOOK SALOON opened in the centre of London.

NATIONAL SCHEME FOR DISABLED MEN

**THE NEW LIBRARY** in connection, can supply you with Books a

**LOWER RATES THAN ELSEWHERE.**

It may be worth your while to obtain a Copy of the Prospectus.

Until the Business Premises are completed, the LIBRARY READING ROOM is on the Third Floor. You are cordially invited to pay it a visit. Orders received by Post are Despatched by Return and Delivered Free in the London Area.

**LIBRARY BOOKS ARE DELIVERED FREE TO ALL PARTS** of the United Kingdom, so that Students in the Provinces are offered the same advantages as in London.

KINDLY NOTE THE ADDRESS:—

## H. R. ELLIS, Bookseller (from the Oxford University Press),

**9, Lovell's Court, Paternoster Row, LONDON. E.C. 4**

(100 Yards from St. Paul's Cathedral.)

# An Address

ON THE

# APPLICATION OF WAR METHODS TO CIVIL PRACTICE.

*Delivered before the Clinical Section of the Royal Society of Medicine on Jan. 9th, 1920,*

BY SIR ANTHONY BOWLBY, K.C.B., K.C.M.G., K.C.V.O.,

SURGEON-IN-ORDINARY TO H.M. THE KING, ETC.

GENTLEMEN,—My absence from England when our session opened prevented me from acknowledging earlier my appreciation of your kindness in electing me to be your President, and I gladly do so now. I have always kept in mind during the war the question of the ultimate utilisation in civil surgery of that vast experience of wounds which can only be supplied by a great war; and I think that, while this is yet fresh in our minds, we should test some of those methods which thousands of British surgeons have learnt in various parts of the world.

## "SHOCK" AND ITS PREVENTION.

It will be universally acknowledged that the first and most striking danger to the man wounded in war is "shock," and this condition is met with in a far higher percentage of men wounded in war than in those correspondingly injured in the occupations of peace. The reasons for this are sufficiently obvious, for the man injured in the workshop or the factory or on the railroad is not suffering from want of sleep or want of food and of water. He is not unduly exhausted by physical strain or by mental excitement, and when he is injured help is at hand quickly. The man injured in war is frequently suffering from some or all of these causes of exhaustion, and he is often thoroughly chilled after his injury through lying out in cold, wet, or even freezing weather. The shock of the soldier is, as a result, often quite out of proportion to the severity of his wounds, and is consequently not to be estimated accurately as true "wound shock" until these other factors have been eliminated by appropriate treatment. Unless this is kept in mind, it becomes exceedingly difficult to estimate the true value of remedial measures, for it will be found in war that complete rest, plenty of hot drinks, and plenty of warmth will in thousands of cases restore in a comparatively few hours men who were cold and pulseless on admission to hospital. I have always been convinced that the most important of all the remedies for shock is warmth, and that nothing takes its place. When this was appreciated, and when every casualty clearing station had arrangements for warming men by the introduction of hot air under the blankets, the majority of the badly shocked men went to sleep after a good drink and recovered with surprising rapidity.

It must be constantly kept in mind that the injury inflicted by rough transport may be as potent a cause of true wound shock as was the original gunshot wound itself, and it is therefore obvious that if this statement is as true as I believe it to be much of the wound shock can be obviated by sufficient care: first, in the early application of suitable splints, which should be employed in all severe injuries and not reserved for fracture cases alone; and secondly, by the supply of well-hung and well-warmed ambulance-cars.

It was partly by such simple and accessible methods as these that the condition of the wounded man was so greatly improved during the war, and it will be by the application in civil life of the knowledge we have gained that a like improvement will be obtained in peace.

*Splints and ambulances.*—I have been myself so convinced of the importance of care in the transport of injured men that, with the aid of the Army Medical Service and of the British Red Cross Society, I have arranged for the equipment with suitable splints of the motor ambulances which have been supplied to various parts of Great Britain, and arrangements are now being made to see that the ambulance drivers and orderlies are as thoroughly trained in the use of the "Thomas outfit" for fractured extremities as were our orderlies at the front in France. It is quite easy to train men who have no surgical knowledge at all so that they shall provisionally put up a fractured leg or thigh much better than the best surgeon could have done it before the war, and I believe that one result of what our experience has taught us is that in every country arrangements should be made to teach how badly wounded men may be taken even for great distances without further injury being inflicted upon them by the transit.

## THE TREATMENT OF SHOCK.

So much for prevention of shock, but, as far as treatment is concerned, the practical deduction which is to be drawn from a consideration of our present knowledge of shock is that, isasmuch as the principal phenomena are loss of blood volume and fall of blood pressure, the obvious aim should be to restore these.

The treatment by rest, warmth, and taking of fluids is indicated in all cases, whatever more may be required, and morphia in moderate doses will be useful in allaying pain, anxiety, and excitement, and so encouraging sleep. In many cases nothing more is needed. The simplest method of increasing the blood volume is to administer fluids by the mouth, and as all soldiers in battle areas have only limited supplies of water to drink it should be accepted as an axiom that all wounded men always require drink as soon as they arrive at an aid-post or field ambulance.

Unfortunately, many patients with really severe shock are quite unable to keep down any fluid, and in that case rectal injections are often most useful. I believe it is true that both blood pressure and blood volume are more likely to remain permanently improved by gastric or rectal absorption of fluid than by the intravenous administration of the same quantity. It seems clear that the direct addition of fluids to the venous blood is not so good as the making of blood serum by the patient himself from fluid absorbed through a mucous membrane, but in many cases of severe shock, and in view of the fact that delay may mean disaster, it is often necessary to perform intravenous infusion as soon as the patient has been warmed and rested. We have learnt that normal saline solution is useless for this purpose, but it is the opinion of most observers (and it is mine) that Bayliss's solution of 6 per cent. gum arabic in normal saline is often of the greatest benefit in raising the blood pressure for long enough to carry the patient over the danger period.

In proportion as the shock conditions are due to excessive bleeding immediate infusion of blood is

better than gum solution, and is undoubtedly indicated; not less than a pint should be introduced. There is no doubt that many lives were saved by this practice, and there is also no doubt that it was not until the surgeons of the United States Army joined the British casualty clearing stations in 1917, before Passchendaele, that blood transfusion became common. Its employment was subsequently utilised yet farther forward, and great benefit ensued when prepared citrated blood was sent up to the field ambulances when a battle was impending during the advance of the Allies in 1918, as it could safely be kept for from 12 to 18 hours or more before use. I would suggest that in future sterilised gum solution should be kept ready for use by operating surgeons and by all civil hospitals, and also that test sera for donors of blood should be regularly stocked, so that no delay may arise in the choice of a donor, for if such treatment is necessary at all it is certain that there will be no time to waste, as the experience of war has shown that if blood is transfused too late it is quite useless.

### ANÆSTHETICS.

But if we have learnt much that is valuable about shock and its prevention and treatment, we must realise that after the patient had been pulled through with difficulty it was often necessary to operate as soon as possible and before sepsis had appeared upon the scene; so that no sooner had the patient been saved from the shock of his original injury than he was obliged to run the risk of operation shock. Still, where limbs were hopelessly shattered, or main vessels were torn, or the abdomen was shot through, &c., there was no choice left to the surgeon, who also knew that in many cases the rapid removal of a smashed limb resulted in great relief of symptoms. But operation generally meant anæsthetics, and here we were destined to learn a great deal that was new to us.

#### *The Choice of an Anæsthetic.*

With regard to the choice of an anæsthetic agent it may be conceded at once that for all slight operations on patients in good condition "open ether" was very often quite satisfactory. But when in wintry or wet weather very many of the wounded were already suffering from a bronchial catarrh ether was very liable to cause grave pulmonary complications, and it was not until we introduced the "Shipway apparatus" for warming the ether vapour that it could be safely administered in such cases. I would very strongly advocate that in the future warm ether vapour should be systematically employed as the better routine method where ether is used in civil practice, for it is not only less irritating to the lungs, it is also much less liable to cause severe vomiting. But in cases of shock neither chloroform nor ether is safe, for a careful record of blood pressure in operations during shock by Major Geoffrey Marshall showed conclusively that after the use of these anæsthetics, although the blood pressure might be high when the operation was finished, this was soon followed by a reactionary fall and death.

And not only is ether not a safe anæsthetic in shock, it is also very injurious if, as is so often the case, it causes nausea and sickness in men who need every ounce of fluid nourishment that can be given, for this sickness, if continued for some hours, will destroy the last chance of recovery for the shocked man.

Much had been expected from the intrathecal use of stovaine, but the sudden fall of blood pressure it caused proved it to be very dangerous to shocked men, and not so good as novocaine. Local anæsthesia was so tedious that it was not possible to use it as a routine method where patients were numerous. It was very useful in selected cases. There remained nitrous oxide and oxygen. The value of this agent in shock had been conclusively proved by Marshall in 1916, and his observations showed that under its influence extensive operations could be performed without any immediate or subsequent fall of blood pressure. Its use saved many lives, and in abdominal operations the very best results of all were obtained by combining it with infiltrative anæsthesia of the abdominal wall. By this combined method the gas and oxygen required was reduced to a minimum and the operator was not troubled by abdominal rigidity. It was by the use of this combination that Majors D. Taylor and G. Marshall at "Remy siding" succeeded in saving 74 patients in a consecutive series of 101 operations for perforating wounds of the abdomen, and I believe that these results were amongst the best obtained in the British Army during the war.

Very much more might be said of war anæsthesia did time permit, but I would urge that gas and oxygen should be supplied, together with suitable apparatus for all the Army Medical Services of the future, and I would also press upon your attention the value of warm ether vapour in the prevention of pulmonary complications.

May I add further that I believe that the combination of gas and oxygen with local anæsthesia is the very best anæsthetic agent for a number of the abdominal operations of civil life and for many others also, for it causes no fall of blood pressure, it eliminates anæsthetic shock, and it abolishes post-anæsthetic vomiting and all its attendant troubles. It must, however, be remembered that it is not always a satisfactory anæsthetic for vigorous and muscular people on whom a prolonged operation is to be done, and that its lengthy administration requires both experience and special apparatus.

### THE TREATMENT OF PATIENTS WITH FRACTURES.

Let me ask you now to direct your attention for a few minutes to the treatment of fractures, for I think it is the opinion of all surgeons that here there have been great developments. For example, compound fractures of the femur are now treated infinitely better than before the war.

I will briefly sum up the position by saying that the fractures in France in the last half of the war were treated by "extension and suspension," so that the circulation, nourishment, and mobility of the injured limb were maintained throughout as far as possible. Constriction by bandages has been reduced to a minimum, and limbs are no longer encased in wooden boxes or in plaster-of-Paris, and, as a result of the precautions to maintain in this way the vitality of the limb, wasting of muscles and stiffness of joints have been largely prevented.

It is greatly to be hoped that our war experiences will be utilised at home, and that all hospitals and medical schools will arrange for a much more systematic teaching of how to deal with fractured limbs, so that all young surgeons will in future realise that the so-called "setting" of the fracture should be really only the beginning and not the end of surgical treatment. And if this aim is to

be achieved it will be necessary that some at least of the fracture cases in general hospitals shall be collected in "special fracture wards" equipped with the necessary apparatus for "extension and suspension," and supplied also with a mobile X ray outfit, for there are many cases where a good result can only be obtained by frequent radiography at the bedside.

Let it be fully realised that so long as the principles I have sketched are kept in view the details of how best to carry them into practice must be left to the skill and ingenuity of individual surgeons.

### WOUND INFECTIONS AND ANTISEPTICS.

Throughout the war experience of wound infection was on a larger scale than had been anticipated, and I will only touch on one or two of the more obvious features of this great subject. It is already widely known that tetanus was prevented by prophylactic injections so successfully that its incidence immediately fell 90 per cent. as soon as the anti-toxin could be supplied in sufficient quantities, but it must be appreciated that if success is to be obtained in civil practice the injections should be given within a few hours of injury. Unfortunately we had no similar success in the employment of prophylactic injections for "gas gangrene," and even at the end of the war the most recently manufactured sera were of doubtful value. At first we found no real remedy. Time and experience alone led us to the proper treatment by excision of all devitalised tissue and the careful and thorough mechanical cleansing of the wound; and it was during this period of learning and experimenting that "antiseptics" were given so thorough a trial and were proved to be so valueless when placed in grossly contaminated tissues.

The uselessness of attempting to sterilise a grossly infected wound by the single application of a powerful chemical agent is really nothing new, and my friend Sir George Makins pointed out in his Hunterian oration that Lister himself was quite aware of this, for he wrote, "If for example a pair of forceps is handed to the operator with the intervals between the teeth occupied by dry septic pus, and a portion of this dirt becomes detached and left in the wound, the evil cannot be corrected by any antiseptic wash that is now at our disposal or that the world is ever likely to see." Very striking words! In spite of this dictum, however, some of Lister's admirers in England urged us in France to try to sterilise wounds by the early introduction of powerful antiseptic agents, and with the natural result that such measures were tried and absolutely failed.

*Suture of wounds.*—I have already said that the only real method of sterilising the wounds of war, as we saw them in France, was by a suitable operation and the mechanical removal of all that might do harm, so that no tissue which is too badly damaged is left. The next question we had to decide was how to treat such a wound subsequently, and, as you are well aware, the answer was ultimately found in the closure of the wound by either "primary" or "delayed primary suture."

And we also learnt both that the results of suture were not materially influenced by the use of any antiseptic agent, and also that wounds could heal well and firmly even though they contained considerable numbers of micro-organisms, so long as the latter did not include virulent streptococci.

It was evident that the tissue cells could destroy the less virulent bacteria, provided that the latter were surrounded by healthy living tissues, and that by closure of the wound the advent of fresh infection was effectually prevented. The presence of bacteria of very various kinds in wounds which nevertheless did well was recorded by observers of every nationality, and especially in the United States units by Crile, Kenneth Taylor, and H. Cabot; and in the British units by Forbes Fraser, Adrian Stokes, McNee, and the workers in Almroth Wright's laboratory. In almost all regions of the body we closed wounds successfully, either by primary or secondary suture; in the head and neck, the limbs, the chest, the abdomen, and the large joints, and we soon learnt by experience that if patients could not be retained at the front after suffering from extensive wounds it was better to send them to the general hospitals with a packing of gauze, and let the wound be sutured without further interference after arrival. We found no advantage in using antiseptic substances with this packing, although many surgeons did employ flavine or solutions of the bismuth, iodoform, and paraffin paste suggested by Rutherford Morison.

Much more might well be said as to details of treatment in different regions of the body, but the results obtained in the later stages of the war may be briefly summed up saying that not only were many lives and limbs saved by wound closure, but that compound fractures healed more rapidly and with much less necrosis, joints were saved from acute arthritis, suppuration of wounds became rare, septic infection with its fever and emaciation diminished, and convalescence was infinitely more rapid. From the army point of view fewer beds were occupied, nurses and surgeons were spared much unnecessary work, and many soldiers were returned to their units fit and well within a few weeks instead of suffering for months from suppuration.

### WAR METHODS IN CIVIL PRACTICE.

Surely it is evident that much of what we have learnt is applicable to civil practice. Is it not certain that we shall close open wounds of the knee, that drainage-tubes will be much less employed, and that "delayed primary suture" will become a common method for the treatment of bad compound fractures and the lacerated wounds caused by machine accidents? The same method of wound closure by delayed suture will be found just as useful in amputations through tissues near to suppurating areas. We found it most helpful in the treatment of Syme's amputation, and Colonel Elder, when consulting surgeon at Rouen, showed me a very striking series of successful amputations by Syme's method performed upon natives of India for gangrene following frost-bite, and treated by suture after being packed with gauze for three or four days. I believe that there is a wide field for the application of war methods to the treatment of the injuries of civil life, but I would emphasise that in suturing wounds after the interval of a day or two it is essential for success that no further wound toilet is permissible. The packing should merely be removed as gently as possible and the sutures inserted and tied.

*Secondary infections of wounds.*—Our experiences of the value of closure of wounds very naturally directed our attention to the question—How did the wounds become infected by pyogenic organisms? We found that not more than 15 per cent. of recent wounds were infected by hæmolytic streptococci when examined in the

operating theatres of the casualty clearing stations at the front; but we were told by our bacteriologists at the different bases that within a week of arrival over 90 per cent. were infected; and shortly before the war ended we appointed an Anglo-American Committee to investigate the whole question of streptococcal infection. Of course, it was evident that when wounded were numbered by the thousand it was not possible to ensure complete sterilisation of hands and instruments after each case had been examined or dressed, but it did appear to be very clear that, as instruments are more easily sterilised than hands, it was very desirable not to touch the wound or the dressings except with instruments, for we had no doubt that wounds usually became contaminated when they were dressed. It was then decided that an investigation should be made in order to ascertain whether many of the medical officers, nurses, or orderlies at the bases were acting as "carriers," and 8000 examinations were made (in the American Army) of their throats, with the result that it was reported at the last meeting of the Committee that "carriers" of hæmolytic streptococci had been found in different bases to number from 15 to 25 per cent. of all the hospital personnel. Here, unfortunately, the matter had to be left, for the war had ended, and the streams of wounded men had, happily, ceased to flow.

It is, of course, not to be supposed that carriers of streptococci are to be found in civil life in any such numbers as those I have mentioned; but experience of the general hospitals in France does show the danger of wound infection spreading when large numbers of streptococcal-infected wounds are accumulated in war conditions; and, what is most important, it explains why it was that the closure of wounds by suture was of such great benefit to the wounded soldier. I would also suggest that the investigations we began are worth pursuing in hospital wards given over to the treatment of cellulitis and erysipelas, and that, in the interests of both staffs and patients, this should be done.

*Suppurating wounds.*—There remains the question of the treatment of suppurating wounds, and here we have learnt two things: first, that it is more often possible to suture them than we had previously thought; and, second, that Carrel's method is often a very great improvement on the drainage-tube and the daily syringing.

With regard to the first, we found in France that very many wounds could be successfully sutured even if they were suppurating. Secondly, with regard to Carrel's method of treating suppurating wounds, there is no doubt at all that it has marked a very great advance. It supplies a thoroughly scientific and carefully thought out technique, and has been proved to be of the utmost value in the hands of many of the best French and Belgian surgeons, as well as in British hospitals. I have seen admirable results from its careful employment, and I believe that where surgeons have had an unsatisfactory experience this has been largely due to an imperfect technique, for in many hands it has given admirable results in stopping sepsis and suppuration, and in enabling granulating wounds to be closed by secondary suture.

It is difficult to decide the rather academic question as to whether the method owes its success to the hyperchlorous solution of Carrel and Dakin or to the method of irrigation, but I think myself that the method is more important than the particular solution. Here, again, we have learnt much that is useful in the treatment of the suppurations of civil surgery, for Carrel's method is not only valuable in the wounds of war, it is quite as efficacious in the treatment of an empyema or pelvic suppuration. I have seen most excellent results from its use in large appendix abscesses on the one hand, or in suppurating joints on the other, and I am convinced that it has supplied to the operating surgeon a valuable addition to his armament.

### CONCLUSION.

In conclusion, I cannot doubt that in the future the civilian surgeon will also work even more with the bacteriologist than he did before the war, for it has been by collaboration and experiment that many of our advances have been maintained without risk to our patients. And, whatever we may have learnt, there is inevitably much more to learn in the near future. Let us all keep this in mind, and let us also remember that, as far as details are concerned, a too rigid standardisation may be harmful. The only safe attitude is that we should be always inclined to believe that however good a method may be it is always possible to evolve another which may be better still.

I have endeavoured to point out to you in what I have said that the surgery of the immediate future may well be expected to benefit from our recent experiences; that we should improve our transport service and our first-aid for the wounded in civil life; that shock can be better treated and can often be prevented; that anæsthesia can be rendered safer; that no antiseptic can at once sterilise infected wounds; that in delayed suture we have an important advance in surgical technique, and that suppurating wounds can be treated by improved methods. You are all well aware that were I able to consider in detail the surgery of the various regions, such as the head, the chest, the abdomen, &c., I should be able to record very many examples of advances in surgery, but this is not the occasion for such a discussion, and I am content to deal only with more general principles.

# Bradshaw Lecture

ON

# THE SURGERY OF THE HEART.

*Delivered before the Royal College of Surgeons of England on Dec. 11th, 1919,*

BY SIR CHARLES BALLANCE, K.C.M.G., C.B., M.V.O., M.S. LOND., F.R.C.S. ENG.,
CONSULTING SURGEON TO ST. THOMAS'S HOSPITAL, ETC.

*(Concluded from p. 79.)*

## PART III.

### INFECTION THE CRUCIAL FACTOR IN HEART WOUNDS.

SEPTIC pericarditis and septic pleurisy are the two most fatal complications of heart wounds. Here, as elsewhere, fulminating infections are met with in which surgery is at present powerless to arrest a fatal termination. Apart from these the most urgent question is, What treatment should be carried out? How can the cavity of the pericardium be efficiently drained, or should it be closed without drainage?

In the peritoneum experience has shown that the most extensive drainage is ineffective and harmful, and that the copious irrigations formerly carried

out tend to spread rather than check the disease. Further, that the peritoneum can deal with a certain amount of infective material when once the source of sepsis is removed, and that drainage is no longer always necessary. In the pleura the same holds true, and the removal of a metal fragment and the complete cleansing of the cavity with gauze may be followed by suture of the wound and the daily aspiration of any fluid that accumulates till a cure is effected. The pericardium differs from the pleura and peritoneum in that it cannot be completely inspected and cleansed even if the apex and ventricles are pulled forward so as to expose the mouth of the oblique sinus.

We may take it that the pericardium is widely open in front right down to the level of the diaphragm; that the patient is reclining in the supine position, with the chest and head well propped up with pillows; and, further, that he cannot lie on his face or on either side, for these positions cause distress, pain, and dyspnœa. This position—the semi-Fowler position—seems perfect for allowing the fluid collecting on the diaphragmatic surface of the sac to flow out and not remain for any time within it. From a close study of the case I operated on, Dr. White and I were early convinced that we had not succeeded in a satisfactory surgical manner in draining the pericardium of our patient.

## THE DRAINAGE OF THE SINUS BEHIND THE LEFT AURICLE.

The subject of the surgery of the heart has been so extensively reviewed in numerous papers of great merit, that as I became acquainted with the literature of the subject I began to doubt whether there was anything new for me to contribute to the discussion of this important topic. Let me mention as examples three papers. Sir John Bland-Sutton[1] contributed a paper on "The Treatment of Injuries of the Heart" in 1910. Sir William Thorburn[2] in the same year published a paper on "Cardiolysis," and in 1909 appeared Matas's[3] (New Orleans) admirable essay on "The Surgery of the Heart." I propose, therefore, to confine myself to pointing out a practical detail in the treatment of suppurative pericarditis—namely, the drainage of the sinus or bursa behind the left auricle.

### *Anatomy.*

The pericardium is conical in shape, attached by its base to the diaphragm, while the upper and narrower part surrounds the great vessels. It is supported in front by the ligaments of Luschka, behind by the ligaments of Béraud, and below by the phreno-pericardial ligaments. From base to summit it measures from 12 to 14 cm. The fibrous layer is a dense, unyielding, fibrous membrane. The serous membrane has a visceral and parietal layer; both are in close contact in health, and only sufficient fluid is present to facilitate movement. The sudden effusion of "200 to 250 g. (7 to 10 oz.) of liquid, as in hæmorrhage into the pericardium, is sufficient to arrest the heart's action by compression, while in chronic distension the fibrous layer will gradually give way and 500 to 2000 g. (17 to 60 oz.) of fluid may collect in the sac without causing death."[4]

The reflections of the serous membrane on to the great vessels cause the formation of pouches or recesses. The most important recess, and the one which I want to direct your most particular attention to, is situated behind the left auricle. It is described by French anatomists as the cul-de-sac of Haller, in English works as the oblique sinus, and by Professor Keith as the bursa of the left auricle. It extends upwards between the right and left pulmonary veins and arteries to the upper border of the left auricle. It is 4 to 5 cm. in depth and behind it is the œsophagus. The vestigial fold of the pericardium forms a small pouch which leads into the oblique sinus. The vestigial fold is a doubling of the serous membrane between the left pulmonary artery and vein and contains the remains of the left superior cava. This smaller pouch or diverticulum of the oblique sinus is also behind the left auricle. The large pouch[5] (bursa of Keith) is blind at its upper extremity; it extends obliquely upwards and towards the right as far as the superior cava. The lower end is widely open below at the level of the groove on the posterior surface of the heart between the left auricle and ventricle. The right border of the opening is on a lower level than the left and reaches down as far as the inferior vena cava. The opening therefore faces downwards, forwards, and towards the left. The lateral borders or surfaces of the pericardium are in contact with the lungs, are in constant movement, and are not much under tension. When fluid collects in the pericardium it accumulates mainly in the two postero-lateral pouches of the pericardium on each side of the middle partition formed by the projection of the superior and inferior cavæ and right auricle; and in the dome-shaped space above. The heart cannot move backwards, but its apex and ventricles are crowded forward by the fluid which has accumulated in the postero-lateral pouches, always approaching the chest wall more closely as the tension of the pent-up fluid increases. I made this observation in my case when the pericardium was freely opened and the fluid quickly escaped; the apex of the heart sank down and shut off from the rest of the cavity the recess behind the left auricle; and the failure to drain this recess properly was, I believe, a cardinal factor in the fatal termination of the case. We have to picture to ourselves not a distended pericardium but a cavity freely opened in front, with the cul-de-sac of Haller undrained because the position of the heart blocks the exit of fluid from it. I studied this problem in my patient day and night for three and a half weeks, and its solution is, I believe, of vital importance in the treatment of septic pericarditis.

I distended the pericardium of a young adult cadaver with about 7 oz. of liquid gelatin, the thorax being in the erect position. When the gelatin had set, the apex of the heart was separated only by 3 mm. of gelatin from the front of the distended pericardium, while the base was covered with gelatin 2 cm. (¾ in.) thick. In a distended pericardium the apex of the heart is carried forwards, and the contents of the oblique sinus can escape, but with the emptying of the pericardium the ventricles and apex drop backwards and shut off the oblique sinus from the rest of the pericardial cavity. I made an incision in the left lateral wall of the distended pericardium opposite the mouth of the oblique sinus, and passed

[1] Brit. Med. Jour., May 28th, 1910. [2] Ibid., Jan. 1st.
[3] Keen's Surgery, 1909.
[4] Poirier and Charpy, 3rd edit., T. 2, Fasc. 2, p. 152; and Testut, 5th edit., vol. ii., p. 71.

[5] In a formalined prepared body in which the left auricle was contracted, the pouch of Haller held more than 1 oz. of water. Under normal living circumstances the pouch of Haller is only a potential space (see Braune's plates).

**a large blunt-ended metal probe through it and through the gelatin in the oblique sinus as far as it would go with gentle pressure. The probe disappeared for 4¾ in.**

*Illustrative Cases.*

**The two cases following offer a striking contrast: (1) Delbet's case, which ran an aseptic course; (2) my case, which is a typical example of acute suppuration within the pericardium.**

*Removal of bullet wound from heart; recovery. Paul Delbet's case (1917).*[6]—An infantryman, aged 31 years, was wounded on April 16th, 1917, near Craonne, by grenade splinters in the right side of the thorax posteriorly, also in the right arm and forearm. He became confused, and then lost consciousness for about 20 minutes. From the dressing station he was sent to the nearest field hospital, where he remained several days. The wounds in the upper limb were treated, and fragments of clothing were removed from the wound in the thorax. The case was not considered grave, and no X ray examination was made at that time. He reached Paris on May 2nd. His face was then wax-coloured, respiration was frequent and shallow, and the slightest exertion caused dyspnœa. Temperature 104° F., pulse 120. Behind and to the right, three finger's breadth from the median line, was a suppurating wound 3 cm. long, where a grenade fragment had entered; there was no wound of exit. There was congestion of lower lobe of lung on both sides and the area of cardiac dullness was considerably increased. Radiography showed a foreign body within the heart shadow, a little to the right of the median line 6½ cm. from the level of the sixth costal cartilage. By the stereoscopic method it was shown to be in the right side of the heart.

*Operation* (June 26th) 70 days after the injury. An osteoplastic flap with base outwards (Delorme's method) was turned back. The mediastinal fat and cellular tissue were displaced; in doing this a small opening in the pleura was made and was closed with forceps. The pericardium was picked up with forceps and incised; it was closely adherent all over. The adhesions were separated with the finger, first on the left and then on the right side. A foreign body was felt in the middle of the right ventricle. The heart could not be held in the gloved hand, from which it slipped like a live fish; glove removed and heart seized with the left hand and rotated a little towards the right; an incision 3 cm. long was made in the right ventricle, the foreign body seized with forceps and removed. The wound in the ventricle was closed with three No. 2 catgut sutures. Pericardium and external wound sutured. The foreign body was a fragment of steel, irregularly cubical in shape, 1½ cm. in diameter.

The patient was well in 12 days, and was shown in Paris in September, 1917, in good health.

*Removal of a rifle bullet from the right ventricle of the heart*[7] *by White and Ballance.*—Trooper M., aged 21, was wounded by a bullet on Nov. 14th, 1917. He rode some miles to the nearest dressing station and then collapsed. On examination it was found that the bullet had passed through the upper part of the right arm behind the humerus, and then entered the right chest between the fourth and fifth ribs and had not emerged. A radiogram taken the next day showed the bullet 2 in. from the surface in the cardiac region on a level with the inferior border of the heart; the bullet moved with the cardiac pulsations. It was thought to be in the wall of the left ventricle near the anterior margin. There was some fluid at the base of the right pleura. Patient admitted to St. Elmo Hospital, Malta, from Salonika on Jan. 13th, 1918, as a cot case.

On admission general condition good. While lying down pulse 96, steady and regular; on exertion, such as getting out of bed or picking up an object off the floor from the bed, the pulse became irregular and rapid. He was once allowed to cross the ward, when the pulse rose to 130 and the face became pale. The other clinical findings were all negative, except for a small goitre, which had been present for years. The patient came from Derbyshire. Repeated X ray examinations, both with the screen and by means of stereoscopic plates, were made. These showed movement of diaphragm independent of the bullet. The bullet lay behind the left fifth cartilage and left fifth intercostal space ¾ in. from the left border of the sternum and about 2 in. deep from the skin surface in front. The base of the bullet lay towards the right, while the pointed end was directed towards the left and somewhat downwards, and moved more than the base with the pulsations of the heart. It was thought that the base of the bullet was fixed in the wall of the right ventricle, and that the pointed end was in the cavity of the right ventricle.

The patient had suffered severely from sea-sickness during the voyage from Salonika, and this had caused much distress from palpitation and choking sensations. Further, the rapidity and irregularity of the heart on the slightest exertion and the known position of the bullet made it desirable to perform an exploratory operation in order to determine whether it was possible to remove the bullet. The patient had remained in bed under observation without improvement.

*Operation* (Feb. 16th, 1918).—The Delorme-Kocher incision for exposure of the heart was made and the fourth, fifth, and sixth costal cartilages of the left side were removed. The internal mammary artery was tied in two places and divided between the ligatures. The triangularis sterni was divided, and the border of the left pleura, crossing obliquely the front of the pericardium, was seen and thereafter held aside. No injury to the pleura occurred. The anterior surface of the pericardium appeared normal except for a small, puckered scar half an inch from the left border of the sternum about the level of the fourth space. An incision was made in the pericardium passing obliquely downwards and towards the left, and as long as the resection of the chest wall allowed. A very little gas and frothy fluid escaped, but no adhesions between the parietal and visceral layer of the pericardium were found. The anterior surface of the heart appeared normal both to sight and touch. One of us (W.) then palpated the posterior surface of the heart and at once felt the bullet through the wall of the right ventricle near the apex. Fixation stitches of No. 1 silk were then passed close to the apex of the heart along the anterior inter-ventricular groove. These threads were used to pull the apex of the heart forwards and upwards; a first-rate exposure of the posterior surface was thus obtained. On the posterior aspect of the heart no scar was visible and no bulging was seen. Palpation determined that the bullet was lying near the apex of the heart on the right side of the posterior inter-ventricular groove, and was apparently in the ventricle. Four silk stitches were next inserted in the wall of the right ventricle along the line of the proposed incision; they passed twice through the muscle, so that the loop could be drawn out of the way while the incision was being made. One of us (B.) then seized the heart with the left hand, using the thumb to compress the right ventricle above the line of the proposed incision. It was found difficult to cut the quickly contracting heart muscle with the knife, so the incision into the ventricle was completed with scissors. B. then introduced a pair of artery forceps into the cavity of the right ventricle through the incision, seized the free extremity of the bullet and pulled it outside the heart. In doing so the inner surface of the ventricular wall was everted, exposing the columnæ carneæ, because the base of the bullet was firmly embedded and attached to this surface. W. then, with a knife, cut the inner aspect of the ventricular wall and the bullet was free. The hæmorrhage was fairly profuse, but was at once controlled by pulling on the stitches which had already been passed, and by putting in four more, so as to invert, Lembert-like, the outer wall of the ventricle. The manipulation at no time affected the work of the heart, and the pulse only failed momentarily when blood was escaping from the heart. There was no visible sign of inflammation or

[6] From Delorme's paper in Bull. de l'Acad. de Méd., 1917, p. 243.
[7] Journal of the R.A.M.C., December, 1918.

sepsis. Some saline solution was left in the pericardium and the incision stitched up. The superficial incision was also closed and the patient returned to bed without shock. Colour good, respiration 20, pulse 110. Throughout the operation the blood pressure was carefully noted. The subsequent history after the first few days was that of progressive sepsis, with free discharge from the wound, and although the patient was carefully tended he died on March 14th.

*Autopsy.*—Wide gaping wound in præcordial region; large opening in pericardium; considerable area of anterior aspect of heart exposed. Petechial hæmorrhages subcutaneously and over some of the viscera. The thoracic viscera were taken away entire and preserved in 10 per cent. formalin for further examination. After fixation, both lungs normal. No enlarged glands in hilum of either lung or in mediastinum; the latter was normal. Œsophagus, trachea, and main bronchi normal. The right lobe of the thyroid extended downwards to the bifurcation of the trachea. This enlargement and extension downwards of the right lobe of the thyroid pressed the trachea towards the left, giving it a definite curve in that direction. At the back of the right lobe of the thyroid was a cyst 1½ in. in diameter containing pus; below the cyst was more thyroid tissue. The thoracic lobe was 2½ in. long by 1½ in. wide and was circular on horizontal section. On section numerous cysts were seen, many of which contained pus. In part the interstitial tissue contained calcareous matter. The pericardium was opened from behind. It was lined by a thick adventitious membrane; the visceral layer was everywhere intact but thickened, and some petechial hæmorrhages were seen. The line of incision at the back of the right ventricle was not visible, but two or three puckers on the surface of the heart gave some indication of the site of operation. The operation incision had healed. Microscopic sections through the site of incision in the ventricular wall showed the line of incision occupied by young connective tissue and evidence of pus at the surface; other sections showed encapsulation of ligature and changes in the cardiac muscle near the incision.

*Remarks.*

While the operation was carried out in many respects on the ordinary principles of surgery, treating the heart muscle like any other tissue of the body, the after-treatment was not in its early stages so conducted. When the patient became ill, instead of treating the case on ordinary principles and opening the lines of incision, we were absorbed in dreams and idle speculations, one of which was that clot was forming on the wound in the interior of the right ventricle, and that its extension was embarrassing the action of the heart. It is a common experience that bullets frequently lodge in the tissue and induce neither local nor general infection until attempts at removal are made. The total absence of adhesions or any visible sign of inflammation in the pericardium and heart led us to close the wound in the pericardium, which was a fatal mistake. Further, on opening the pericardium, we had observed a little gas and frothy fluid which, notwithstanding all the other appearances, must have been pathological, so that looking back we may affirm that there was no valid excuse for closing the pericardium. As a matter of fact, the pericardium and superficial wound should have been left widely open as if the operation had been done for suppurative pericarditis. The question of possible sepsis was ignored, and, further, in order not to leave any air in the pericardium, which might have caused surgical emphysema, normal saline solution was left within it, and we believe that this must have embarrassed the heart and promoted sepsis.

In the course of the case it appeared reasonable to assume that an abscess might form in the posterior mediastinum. We found by experiment on a cadaver that the removal of about 2 in. of the sixth and seventh ribs commencing 2 in. from the spines of the vertebræ enabled us to reflect the parietal pleura without injury or difficulty and to enter the mediastinum. In this subject the posterior surface of the undistended pericardium was 5 in. from the skin surface of the back.

Before operation we obtained bullets of different nations to see whether a magnet would be useful in removing the bullet from the patient. It was probable, indeed certain, that the bullet lodged in the patient was projected from a Bulgarian rifle, as the only prisoners taken in the action in which this soldier was wounded were Bulgarians. The modern Bulgarian bullet tested by us was not magnetic, while the modern Serbian bullet proved strongly magnetic. We therefore did not have in the theatre the powerful electro-magnet made for us by the Royal Engineers. After removal the bullet proved to be an old Bulgarian bullet and was strongly magnetic.

It was impossible to drain the pericardium by placing the patient in the prone position, as the heart then immediately blocked the exit from that cavity; besides, the distress of the patient was insupportable. At one time we thought that an abscess was forming in the posterior mediastinum because of intermittent discharge of pus from the left side of the posterior part of the cavity; this portion being inaccessible to visual examination, we could not judge what was going on there, as we could in all other regions of the pericardium. Indeed, we almost hoped that an empyema would form in the left pleura, because then it would have been possible to drain the empyema, and at the same time to make an incision in the pericardium far back on the left side. We were familiar with a case of suppurative pericarditis, complicated with left empyema, in which this operation was done, and the patient recovered.* But in this heart case no empyema occurred and no extension to the mediastinum; indeed, the thick strong wall of the pericardium could not easily or quickly give way to softening or perforation by the action of pus not under pressure. The local treatment consisted in discontinuous or continuous irrigation with normal saline solution or eusol. When a jug of fluid was slowly poured into the pericardium the sac would soon appear quite clean, the pus having been washed away. It was constantly found, however, that pus kept welling up from the region behind the left side of the heart either continuously or in gushes. The phenomenon was constant, and it was certain that it came from a cavity or pouch in the left postero-inferior region of the pericardium, or from a cavity outside the pericardium which intermittently discharged its contents into the pericardium. We felt that for successful treatment this pouch must be drained by incision of the posterior or left lateral wall of the pericardium. The use of a small red rubber catheter pushed from the right side behind the heart (as we thought into the pocket) did very little or nothing to control these gushes of pus. The tube was kept in place for days behind the heart and continuous and discontinuous irrigation was employed; no disturbance of the heart's action was produced.

The examination of the pericardial pus showed the presence of *Streptococcus pyogenes*, *Staphylococcus aureus*, and a long thin bacillus, which was

* See also case by Steward and Garrod, R. Soc. of Med., 1907.

gas-producing and which Major Russell could not identify. In the effort to check the sepsis we resorted to intravenous injections of perchloride of mercury solution and also to transfusion of blood.

The patient became very anæmic towards the end. The red blood count was only 1,500,000. Bazett's apparatus was used for transfusion. The blood was allowed to flow for 5½ minutes; the operation was continued till the blood pressure of the donor fell to 90. Next day Major Russell estimated that 2 out of every 3 red corpuscles in the patient's blood had come from the donor.

### SOME FURTHER REMARKS ON THE OPERATION AND THE PROPOSAL TO DRAIN THE CUL-DE-SAC OF HALLER.

A. In an urgent case the surgeon must operate without being certain of the diagnosis. The operation is done to obviate impending death, and all else is secondary. There will be the wound, the signs of hæmorrhage, and the increase in præcordial dullness; but whether the general state of the patient is due to a wound of the heart, or of one of the great vessels, or of the root of the lung, or of the internal mammary, or the intercostal artery cannot be determined before operation. In my case I had the opportunity of observing the effect produced by the filling of the pericardium with fluid under tension. "Then breathing became laboured and shallow, the extremities cold, there was free perspiration, great thirst, and much pain in the left side of the chest. During the night the patient was very restless, the face and limbs cyanotic, and the pulse very feeble." When fluid finds no outlet from the pericardium as illustrated in this case the "Herz-tamponade" begins, and is indicated by the signs of venous retardation caused by compression of the auricles. During a coughing fit on the following morning a large quantity of clear fluid escaped from the pericardium. The patient collapsed and became unconscious and pulseless. He revived in half an hour under the vigorous use of restoratives, then asked for his breakfast; pulse strong, 90, breathing deep and easy, all pain gone. After breakfast he slept quietly for three hours, and on waking up expressed himself as being well; the blood pressure was 120.

*Signs and symptoms.*—In purulent pericarditis the upper segments of both recti may be rigid, and there may be a narrow band of œdema round the front and left side of the trunk about the level of the fifth interspace. I have seen this band of œdema and I have known suppurative pericarditis mistaken for inflammation below the diaphragm. Absence of diaphragmatic movement is indicative of pus in contact with the diaphragm.[9] In pericarditis with effusion the right lobe of the liver is low; in dilatation of the heart the right lobe of the liver is not depressed.[10] Moog reports a case in which he tapped a much-distended pericardium through the fifth space in front and through the eighth space behind. This is important, for Mackenzie reports having tapped a purulent pericardial effusion from the back in mistake for an empyema.[11] Many observers have found a small area of dullness in the left back just inside the angle of the scapula. This was discovered by Sir A. Garrod in my case, and being associated with slight difficulty in swallowing was thought at first to indicate a collection of pus in the posterior mediastinum. The early diagnosis of purulent pericarditis is greatly assisted by X ray examination and by the blood count record. These should never be omitted.

B. Contrary to Delbet's experience, I found no difficulty in holding the heart with the gloved hand; the heart was said to wriggle out of Delbet's gloved hand like a live fish. My success in holding the heart was, I believe, due to the fact that the apex was drawn forward by fixation stitches, which assisted to control all movements except the pulsations. In any future operation on the heart I should certainly place a fixation stitch or stitches through the apex as a preliminary measure.

In suturing a wound of the heart fine vaselined silk and small round needles should be employed. No salt solution should be left in the pericardial sac; it should be gently dried with gauze. In profuse suppurative pericarditis the edges of the pericardial wound should be stitched to the skin.

In young children as a complication of pneumonia or empyema suppurative pericarditis is not uncommon, and with the pericarditis there is sometimes a septic gelatinous-spreading mediastinitis. In children especially I think it is advisable to stitch the opening in the pericardium to the skin in the hope that mediastinitis will be prevented. Every case of suppurative pericarditis which is not drained must end fatally. There are strong advocates for and against pericardial drainage. I refer particularly to cases of gunshot wound of the heart or pericardium. It would seem that in many such cases drainage is a mistake. Statistics do not really help—e.g., one writer quotes the following:—

Pericardium and pleura closed in 30 cases; 21 recovered.

Pericardium and pleura drained in 43 cases; 25 recovered.

These figures are not of decisive significance, for each case must be decided as far as drainage is concerned on its own merits. No two cases are alike. It is from the study of individual cases that the right treatment will be evolved.

C. *Drainage of the cul-de-sac of Haller.*—Certain cases of suppurative pericarditis recover with simple drainage through the anterior wound; there are others that do not, and it is in these that drainage of the cul-de-sac of Haller must be considered. The tube cannot be introduced into this pouch by passing it under the heart from the left side; it might, indeed, not even lie in the mouth of the sac, but remain between the heart and the diaphragm. The same thing is true of any attempt to introduce a tube into the pouch by passing it between the left border of the heart and the inner surface of the left lateral wall of the pericardium, because these are in close apposition and drainage would probably be no better than if the tube were carried under the heart, and, further, because the operator would be directing the tube backwards, while the long axis of the pouch is in the vertical direction.

[9] Porter (Annals of Surgery, 1900, p. 769) analysed a large number of cases of suppurative pericarditis. The operation mortality was 60 per cent. The amount of pus evacuated varied from 10 oz. to 2 quarts. Rhodes (Annals of Surgery, 1915, p. 660), in a paper on Suppurative Pericarditis, adds 13 cases to those of Roberts, 1897 (35 cases); Porter, 1900 (16 cases); and Eliot, 1909 (22 cases); making a total of 86 cases. He voices the opinion that aspiration is dangerous and that X-ray examination and the blood count are of great value. Davis (Surgical Clinics of Chicago, 1917, p. 375) relates a successful case of suppurative pericarditis treated by operation. He refers to Février's 9 cases treated by aspiration, all of which were fatal. (Contrib. à la Chir. du pericarde and paracentèse et pericardiotomie, Bull. gén. de Thérap., 1889, cxvi.) He says the mortality of incision is 45 to 50 per cent.; and that the position of the right border of the left pleura is so variable that no accurate idea of its relation to the pericardium is possible.

[10] Calvert: Jour. Amer. Med. Assoc., 1910.

[11] See paper by Robey, Amer. Jour. Med. Sci., April, 1917.

In my opinion, the only satisfactory way of draining the pouch of Haller is by making an opening in the left lateral wall of the pericardium opposite the mouth of the pouch. In order to do this there are obvious advantages in the adoption of the Spangaro operation.

In most cases the tube will lie inside the pleura in its course to the surface and should be packed round with gauze, but if the pleura and lung are not wounded it might be possible to strip back the pleura and push back the lung from the lateral boundary of the pericardium, making the incision in the proper place in the pericardium without opening the pleura.

In reading the records of cases of suppurative pericarditis one is struck with the almost universal difficulty experienced in maintaining drainage. Take, for example, the case of Hilsmann[12] that recovered. A free incision into the pericardium was made in the fourth space. Two pints of pus came out, and much more escaped during the next few hours. During the after-treatment the patient had to bend over, so that his chest was in the position it would have been if he had been standing on his head, in order to empty the pericardium. This manœuvre would cause the ventricles to move forward, and thus the mouth of the cul-de-sac of Haller would be opened.

Again, a fatal case[13] is recorded in which, though a half-pint of thin greenish pus was evacuated through an anterior pericardiotomy, yet at the post-mortem an abscess cavity was found behind and to the left of the heart within the pericardium.

Lastly, cases of purulent pericarditis with left empyema, in which the pericardial wall has been incised through the empyema opening, seem to have a better chance of recovery than those drained through an anterior pericardiotomy. The presence of pus pent up in the cul-de-sac of Haller, quite independently of the effect of sepsis, must interfere seriously with the function of the left auricle.

### CONCLUSION.

I am well aware that the suggestion I have made that in certain cases of purulent infection of the pericardium the cul-de-sac of Haller should be drained is not founded on the actual successful performance of the operation, but I venture to maintain that such an operation is justified on the anatomical and pathological considerations which I have endeavoured to set before you.

I do not doubt that the surgery of the heart will occupy in the coming time a conspicuous place in surgical practice. The reward of success will attend our efforts in so far as the heart is treated as one of the ordinary tissues of the body and the method of operation conforms to the fundamental principles of surgery.

What developments in this field of surgery may take place we cannot know. It is best to be content with the present splendour and not to be impatient to paint yet more glorious triumphs on the cloud curtain of the future.

[12] Ueber die Paracentese des Pericardiums. Kiel, 1875. Inaug. Dissert. This is one of the 51 cases described by Porter in the Annals of Surgery, 1900.

[13] Coutts and Rowlands: Brit. Med. Jour., Jan. 2nd, 1904. Pericardium exposed by removing the left fifth cartilage and nibbling away a bit of the adjoining cartilaginous sternum. Half a pint of thin greenish pus escaped on incising pericardium. Death three months later. Autopsy: Besides other lesions an encapsuled abscess containing 3 oz. of pus was found. The cavity lay behind and to the left of the heart and within the pericardial sac. The original anterior pericardial wound was not quite closed. It led to a small pocket of pus in front of the heart.

## TREATMENT OF MALUNION IN FRACTURES OF THE FEMUR.

BY W. ETHERINGTON WILSON, M.R.C.S. L.R.C.P. LOND.,
MEDICAL OFFICER, I/C FEMUR WARDS, 1ST LONDON GENERAL HOSPITAL.

*Introduction by*

SIR ANTHONY BOWLBY, K.C.B., K.C.M.G., K.C.V.O., F.R.C.S. ENG.,
TEMP. MAJOR-GENERAL, A.M.S.

SOON after the armistice was signed in November, 1918, British soldiers who had been wounded and taken prisoners to Germany began to arrive at our base hospitals in France. Amongst them were a considerable number of fractures of the femur, many of which I saw and examined. Without exception the condition of all these fractures was so extremely bad that they excited universal comment and condemnation, and caused me to inquire into the method or methods of treatment which they obtained behind the German lines.

I had long been aware that many of the Germans had looked upon a soldier with a fractured thigh as a useless encumbrance and hardly worth treating; as long ago as November, 1914, they had deliberately left such a man to die in Ploegsteert Wood, and on three other separate occasions I had personally known men brought by our soldiers into our "C.C.S.'s" who had been refused removal by German stretcher-bearers, stripped of their tunics and equipment, and left on the ground in their shirts. I had also seen some of our prisoners exchanged two years ago as useless on account of fractures of the thigh with gross deformity and shortening, who were returned to England because German surgeons looked upon them as too bad for any surgeon to cure. Yet a large percentage of them recovered with good limbs after appropriate surgical treatment in England. I was therefore quite prepared to find that the results obtained by German surgeons in general were very bad, and, I must add, that, as far as I could ascertain, their own soldiers and ours were treated by the same methods.

The ignorance of the essential principles of treatment must have been very widely spread if one may judge from the similarity of the results from different parts of Germany.

The following was the routine method:—

When picked up the patient was placed upon a stretcher without any extemporised splint, such as a rifle, and was then transferred to an evacuation hospital 10 to 20 miles to the rear. No attempt was made here to operate under an anæsthetic, and dressings often remained unchanged for several days at a time.

In most of the cases the limb was splinted at this stage, but the only splint usually employed was a trough-shaped wire splint without a foot-piece. I have seen many of these, and they were so frail as to be of little use. As no extension was applied, the limb rolled out with the weight of the foot and shortened to a variable extent.

In this splint the patient remained and was transported farther back. The wounds were generally dressed every second day. After the lapse of about two or three weeks the wire splint was commonly removed and the injured limb was enclosed in plaster-of-Paris, which was taken up over the pelvis as far as the nipples. During these two or three weeks more and more shortening had taken place, and the malposition was now rendered permanent by the plaster case. The wound was still dressed every two or three days through

a "window" cut in the splint. After a further period of about two months the plaster case was removed and no other splint treatment was adopted. Sores caused by splint pressure and by vermin were the rule. After this stage had been reached the patient was either left in bed, if too ill to move, or was allowed to get about on crutches. If union of the fracture was materially delayed amputation was frequently resorted to.

**Such is a bare outline of the methods adopted in the case of British prisoners who have been restored to our hospitals, and such, I believe, was the routine treatment of German wounded also. No improvement of methods was discoverable even at the end of the war.**

**I think that perhaps the most remarkable fact is that "extension," which has been the routine method in most countries for over 40 years, was practically never employed, but I should add that at Cologne one "professor" did employ it in the most primitive and barbarous manner in the chief hospital for prisoners in that town. This method was as follows:—**

First, an incision was made two inches behind the anterior superior iliac spine, and then the bone was perforated and a steel hook put through the ilium and brought out above the iliac crest. To this hook a cord was attached, and at the other end of the cord two bricks were slung over the head of the bed. Another steel hook was fixed to the tibia below the tubercle, and to this a cord was attached and two other bricks were slung over the foot of the bed. A whole ward of 30 British patients were thus treated in Cologne until the "professor" died and his colleagues abandoned the method. All hook wounds suppurated and were, as a rule, still suppurating when the survivors arrived in France.

**How many of the British prisoners with fractured thighs lost their limbs by amputation and how many died we have no means of knowing, but the evidence of the survivors shows that both these results were of frequent occurrence. The whole story is very discreditable as far as the German surgeon is concerned, but, fortunately, the results obtained in England by operations on the shortened and deformed limbs go a long way to make amends.**

---

## *Treatment of Malunion in Fractures of the Femur.*

By W. ETHERINGTON WILSON.

Repatriated prisoners of war from Germany have supplied most of the cases of our series in which osteotomy has been done. Other sources have also produced their quota of crooked thighs. These cases are interesting, for they show the results of the ignorant and vicious methods practised by the German, causing hideous and awful crippling which by present-day methods are avoidable. Major M. Sinclair, in THE LANCET of March 29th, 1919, drew attention to these facts.

The results following osteotomy as done by Mr. Harold Wilson, M.S., F.R.C.S., have been excellent and amply justify the operative technique employed.

The after-treatment of the cases in the femur wards follows the teaching of Major Sinclair, whose inventive and mechanical mind has turned the fractured femur into an interesting study. The treatment of fractures has received an impetus during the war which cannot be lost sight of, and it is hoped that the wage-earning capacity and the standard of efficiency required by a man's work will not be lowered in the future to the extent described in 1908 by Mr. Clinton T. Dent in his annual oration on the "After-effects of Injuries," **in connexion with the Metropolitan Police, read before the Medical Society of London.**

### *Actual Conditions Present in Malunion.*

(1) *Shortening* from 2 in. to 7 in. caused by overlapping of the fragments and bowing of the union in one or other direction. The pull of the rectus femoris and hamstrings are chiefly responsible.

(2) *Bad alignment.*—This varies according to the site of fracture.

(*a*) *Backward sagging* of the lower fragments with union at an angle directed backwards is a common deformity present in these cases. It is one of the worst deformities of the femur, and one of the most prone to occur, especially in lower third fractures in which this deformity eventually produces genu recurvatum, resulting in disorganisation of the knee-joint and crippling. The chief factor producing this, apart from gravity, is the backward pull of the gastrocnemius.

(*b*) *Outward bowing*, caused either by union at an angle outwards, or by using the limb too early without support in cases of soft or frail union, is common. In some cases of soft union, when all apparatus has been removed, the thigh will bend outwards by muscular action only. When this bowing occurs in lower third fractures the knee-joint is thrown out of line, and an unequal strain on some parts of the joint follows, resulting in crippling. The muscles concerned in the bending of the thigh outwards are those causing abduction of the upper fragment, assisted by muscles attached to the pelvis and the femur, which lie in a vertical plane internal to the bone itself, forming, as it were, the strings of a bow.

(*c*) *Forward or inward bowing* of the femur is not common.

(*d*) *Flexion, abduction, and external rotation* of the upper fragment, particularly in upper third cases, is a common deformity, these three conditions coexisting. The amount of external rotation is judged by the appearance of the lesser trochanter in an antero-posterior skiagram; the greater the external rotation, the more of the trochanter is visible. The unopposed pull of the external rotators, glutei, and ilio-psoas, and the slackening of the strap-like ilio-tibial band all help in the production of this malposition of the upper fragment. The results of inefficient treatment in these cases are shortening, T-shaped union of the fragments, and an unsightly thigh, the end of the upper fragment often making its way through the skin.

(*e*) *Internal rotation of the lower fragment* is caused by the rest of the limb below the fracture being allowed to roll inwards, chiefly through lack of support. Union in such a position results in the toes being turned in to a varying degree, and this, combined with other deformities present, makes progression exceedingly awkward. The result of union of a fracture in which the upper fragment is very much rotated out and the lower rotated inwards, leaves a condition in which the patient has little or no power to turn his toes out voluntarily.

(*f*) *Traumatic coxa vara*, present in some cases of fracture of the neck of the femur, resulting in shortening and adduction. Osteotomy at the site of fracture was not done in these cases owing to the risk of suppuration in the hip-joint.

(3) *Impaired movement of knee-joint.*—The range of possible flexion was very poor in most of the German cases, as, apparently, no attempt was made by them to deal with the knee question. In one case in which good movement was present it was only got at the cost of increased deformity due to the man being allowed to walk very early and without any walking appliance.

### *Causes of Undue Stiffness of the Knee in Fractured Femurs.*

(*a*) Suppuration among the thigh muscles, particularly the quadriceps extensors, resulting in scarring and fixation to the bone. This scarring of the quadriceps, especially when near the knee, is the most important cause of a stiff joint. (*b*) Inflammation and injuries about the joint, in some cases caused by the use of

callipers, transfixing pins, &c. (c) Prolonged immobilisation, with no efforts at massage and movement.

Extension through the knee-joint is not of itself responsible for stiff joints. Instructive examples of this fact were seen amongst some of the prisoners of war, of which the following case may be regarded as typical.

Pte. M. had an almost immovable knee-joint before osteotomy. When a knee-flexing splint came to be fitted after 10 weeks' extension in a straight Thomas, 20° of flexion at the knee-joint was found possible.

*General Principles in the Treatment of Malunion.*

In the cases requiring osteotomy the bone was divided at the site and in the plane of union of the original fracture. The further treatment of these cases was carried out in the femur wards, and the stages may be very briefly mentioned and summarised as follows:—

*First position.*—Application of a well-fitting Thomas's splint, &c., the thigh being kept in position by an extension, for which purpose Sinclair glue or two screws in the upper third of the tibia were utilised; I prefer the tibial screw extension to any other form and this was chiefly used. Callipers to the knee were not used. The limb is supported by slings clipped in position in the usual way and the foot controlled by Sinclair's foot-piece. Extension is obtained by "body-weight," the amount being regulated by the height of the foot of the bed.

*Extension by screws into the tibia.* (Fig. 1.)—These were largely used in the cases of osteotomy for malunion where a heavy pull was required in the first position. Method of application: The leg is shaved in the area of operation and the strictest aseptic precautions are necessary. The patient is anæsthetised.

Inner screw. A horizontal incision ½ in. long is made down to the bone on the inner side mid-way between the anterior and the postero-internal borders of the subcutaneous surface of the tibia, 1 in. below the tubercle. A hole is bored slightly downwards, backwards, and outwards through the compact bone, passing across the medullary cavity, and striking off the compact tissue of the opposite side. The diameter of the boring instrument should be less than that of the screw. The latter is driven home, and it is most important that a firm grip should be obtained into the compact tissue of the opposite side. The screw is 2 in. long.

The outer screw, 2½ in. long, has to pass through the anterior tibio-fibular compartment of the leg before reaching the antero-external surface of the shaft. The skin incision is made in the same way, but at a lower level, so that the screws do not foul each other, and the knife is then carried in a plane at right angles to the original incision so as to do the minimum amount of damage to muscle. The screw is fixed in position in the same way as described above, but it is rather more difficult than in the case of the inner one. About ½ in. or more of each screw remains unburied, and over each of these a metal ring-shaped 8 is applied, one of the loops having 3 ft. of strong tape firmly tied on to it. Dressings soaked in a 5 per cent. solution of picric acid are applied, and the whole field of operation is concealed by a sterile gauze roll. This dressing is never removed unless occasion arises.

The two tapes are tied round a square extension support of metal fixed to the end of the Thomas, the ring of the splint having been pushed up the thigh previously as far as the tuber ischii. The width of the extension support keeps the tapes clear of the malleoli.

*Advantages of screws.*—(1) They are absolutely painless if properly inserted. Those cases which have experienced both glue and screws infinitely prefer the latter. A patient upon whom osteotomy had been performed was not aware that screw extension was being used until he was questioned about them four weeks later. (2) In certain cases when the skin will not stand a pull by glue, screws will save much trouble both to the patient and the surgeon. (Screws must not be applied to blistered parts.) (3) Once inserted, the screws last throughout the treatment of a case. (4) Unlike the wounds produced by many callipers, they do not cause a zone of inflammation, and the wound heals in a few days when the screw has been removed. (5) A greater amount of pull can be obtained than with glue, sufficing for all practical purposes.

*Disadvantages.*—(1) The possibility of sepsis, depending entirely on the precautions taken. Our results have been excellent, and nothing untoward has occurred. (2) An anæsthetic is needed for their insertion, but in cases in which the femur is being put up under an anæsthetic or an operation done in the theatre the screws are done at the same sitting.

No anæsthesia is necessary for their extraction; the process is not so painful as pulling glue or adhesive plaster off a hairy leg. X rays show an area of atrophy around the thread of the screw, and this makes extraction of thescrew easy.

The first position is, therefore, one of extension and of manipulation of the fragments, the deformity being corrected and an additional length given to the limb. The attainment of the latter is accomplished in two to three weeks by continued and steady traction on the soft parts of the thigh, the supporting slings controlling the fragments as desired. Enough callus is, as a rule, formed in eight weeks to hold the fragments in the desired position, and the first stage is thus terminated.

*Second position.*—In the second position the body-weight extension is no longer allowed, so that the limb lies passively in the splint. A knee-flexing arm is applied to the Thomas and movements begun. The second stage is, therefore, one of passive hardening of the newly formed callus, and is utilised also for movements of the knee.

*Third position.*—After three to four weeks a walking calliper is applied and used for two to four months. This period is one of active hardening of the junction of the fragments, and prepares for the time when the patient can discard all appliances with safety.

All the upper third malunited fractures were treated on Sinclair's net-bed, and it is impossible to over-praise this excellent means of double abduction and extension in the first stage. Frequent skiagrams must be taken, especially in the first stage of the treatment, anterior and lateral views being necessary. Massage of the knee and patella and muscles of the thigh is begun early, as is also electrical stimulation of the quadriceps.

*Type of Suppuration after Osteotomy.*

The outstanding feature in the majority of cases in which osteotomy was done for mal-union was the occurrence of suppuration, and this of a peculiar and apparently characteristic type. It will be seen from the table appended that all but two of the cases operated on had been healed for periods varying from two to ten months, and the greater number of these suppurated after osteotomy was performed. This fact suggests that the organisms concerned remained latent in the tissues, either in the soft or bony parts or in both. It has been demonstrated by other observers that organisms do exist, and remain latent in scar tissue and in and around foreign material in wounds which have been healed for some time. It is a common experience to see a "flare up" nowadays in a stump or limb many weeks after complete healing, causing sometimes a transient inflammation, sometimes suppuration, with the "melting away" of an old scar. The presence of a sequestrum is also a

common cause of the above state of affairs, and it is possible that dead bone may not reveal its presence for many months and then show itself in the way mentioned. Skiagrams occasionally show opacities in some of the long-standing cases, suggesting dead bone, and yet the wounds healed up without operation. How long and how many of these cases will continue healed remains to be seen in the future. In some of the cases to be described the infection following the operation was undoubtedly derived from the bone, for cavities containing purulent material were seen during the operation in the newly formed bony parts.

*Results of Examination of Pus and Bacteriological Report.*

The pus is thick, dirty yellow, abundant, and has a most characteristic foul, strong, fæcal-like odour, making the vicinity of the patient most offensive. The pus from a number of these cases was examined with a view to demonstrating the presence of spore-bearing anaerobes. No spore-bearers, however, were shown. The pus contained abundant organisms of the proteus and coliform types which produced very foul cultures. Staphylococci were constantly present; streptococci also in most cases. On one occasion cultivation of a small piece of scar tissue removed at the time of operation grew *Staphylococcus aureus* only.

*Course of Events following Osteotomy.*

Drainage is provided in all cases, as for two or three days the oozing of blood derived from the raw bony surfaces is considerable. The amount of shock was small in those cases in which the operation did not prove very difficult, where little blood was lost, and where gas and oxygen with ether was the anæsthetic used. Some shock would seem to be produced by hammering upwards against the hip-joint. It is odd that even after six and eight months, suppuration, so profuse in amount and clinically so alarming, should occur. The thigh swells up, becoming tense, shiny, and tender. Two to three days after operation the oozing blood becomes purulent and offensive. The next day or so a profuse discharge of pus is obtained. The temperature reaches 101°–103° (see Chart 2) about the fifth day and a corresponding rapid pulse is obtained (100–120). If the draining proves adequate the temperature begins to fall step-ladder fashion, becoming normal about the tenth day. Improvement is first detected by wrinkling of the skin taking the place of the glossiness, and appears first when the temperature is beginning to come down. The progress of the case depends on the efficiency of the drainage. The stitches of the 8-in. incision do not attempt to give, and there is often no redness of this part, or, indeed, of the thigh as a whole, due to the fact that the pus is among the muscles and deep to the strong limiting fascia lata of the thigh.

The attenuated organisms are not of a virulent character, for after the natural forces of the body are mobilised and brought into the field of action, a matter of some five days, the enemy is soon overcome. A profuse foul discharge may be kept up for some time, but the temperature and pulse keep down. A subsequent rise of temperature indicates the collection of a pouch of pus requiring an outlet. (See Chart 3.)

Necrosis following suppuration after osteotomy necessitated sequestrotomy in five cases. In doing the operation of sequestrotomy the old scar is used, a sinus being present here as a rule. A 4-in. incision is usually made down to and through the periosteum. The latter is raised and the bone chipped away around the cloaca until the cavity in the femur is exposed and can be thoroughly explored for the removal of the sequestra. At the same time the cavity is converted into a pond with sloping edges to hasten its obliteration and healing of the case. Sequestrotomy was not done early in the cases mentioned. The operation should be

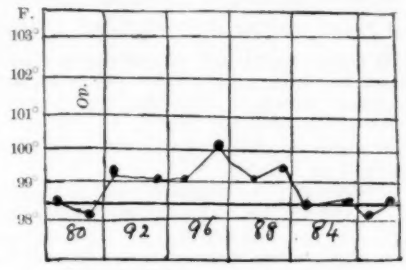



CHART 1.—Osteotomy without sepsis.

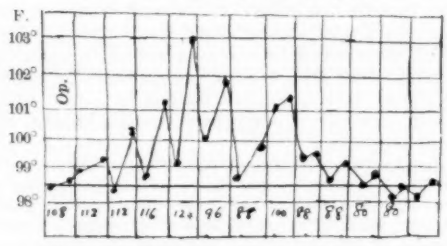



CHART 2.—Osteotomy complicated by sepsis.

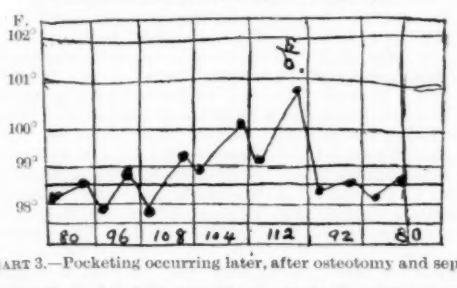



CHART 3.—Pocketing occurring later, after osteotomy and sepsis.

left until it is time for the patient to walk or until he actually has walked about in a calliper for three weeks or so. Obviously, with firm union such an operation can be more safely and thoroughly done.

*The Operation of Choice and the Prevention of Bad Results.*

It may be argued that it would be better, in view of the suppuration occurring, to divide the femur some distance away from the site of fracture in a fresh field free from lurking organisms. The results obtained, however, by the operation as done by Mr. Harold Wilson leave no doubts as to the method of choice. The only disadvantage, suppuration, has not proved dangerous when properly provided for.

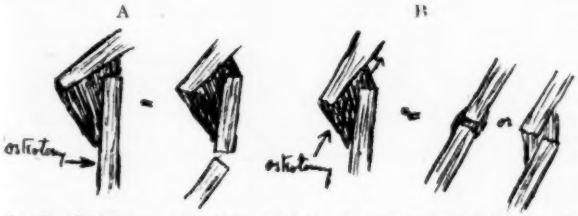
The advantages of this operation are:—

(1) *Increased length*—an important factor when 2 in. or more (see Table of results) may be added to the length of the limb.

(2) *Improvement of alignment and correction of deformity.*—In cases where there is angulation it is most important that in the corrected position the fragments, if not in end-to-end apposition, should at least lie parallel to one another and so produce a straight thigh. The importance of this cannot

be exaggerated, especially in the deformity resulting from the backward sag of the lower femoral fragment.

The two methods may be represented as shown in Diagrams A and B.




*Result.*—Correction of alignment to a large extent, but shortening still remains.

*Method of choice.—Result:* Better correction of alignment and correction of shortening.

The causes of angulation and bending of the femur are:—

(*a*) *Want of care in the first position.*—Mere plating of a femur and treatment without a slight extension on the limb to keep the muscles occupied leads to union, often in a bowed position; indeed, the strong plate bends also if the screws hold.

(*b*) *Assuming the third position too early* or discarding the calliper too soon.

(*c*) *Walking when angulation is already present* to a greater or less degree.

(*d*) *Frail union*, as when only half the broken surface of the femur throws out callus; when loss of bone results in a large gap made good by callus; when there is partial union only, through the loss of fragments; if end-to-end apposition is obtained with little visible or palpable callus.

(*e*) *Sepsis.*—When a sequestrum is present sepsis does not prevent formation of callus, but occasionally seems to hinder proper calcification, with the result that bowing occurs on walking, or even by the traction of muscles while the limb lies in bed between sand-bags.

As already mentioned, premature walking is not the only cause of bowing of the thigh; it can occur by muscular action alone while the limb lies passively in bed. The commonest direction of bowing in these cases is outwards, and seems to be due largely to the pull of the adductor muscles on the lower fragment in some cases. The upper third fracture, or osteotomy, particularly offends in this way, the bowing outwards being primarily due to the extraordinary tendency to abduction of the upper fragment.

Such cases are treated by being put up again into the first position of extension at once, and no difficulty is experienced in getting good alignment again in a few hours or days. A fortnight in this position and a further three to four weeks in the second position warrants a further trial with the walking calliper. The case that has once "bent" needs to be watched, for it may recur, and a further period of treatment, as just described, may be necessary. Bowing of the thigh is often the cause of a surprisingly large amount of shortening, 1½ and 2 in. being common in the slightly curved cases, and this is especially true of upper-third fractures.

*Methods for the Correction of Bowing.*

(1) *Re-fracture by breaking, without open operation.*—The site of fracture is snapped across and the corrected alignment maintained by treatment in the first position with the help of slings pulling the fragments into position. This method, of course, would apply only to recent cases where there was no great overlap, or to cases of frail union which would not mould into position, but would crack across the narrow bridge of callus instead. Simple fractures are safer to deal with in this way than compound, owing to the risk of suppuration ensuing in the latter.

(2) *Active moulding by manipulation*, with or without an anæsthetic, depending on the case and resistance expected. This is done by trying to bend the femur back gently into the straight position over one's arm. This, as a rule, requires to be done within three months of the original fracture, but the amount and density of the callus, as shown in a skiagram and the history of the case, must determine whether moulding is possible. Upper-third cases are difficult to treat by this method, especially when the upper fragment is a mere stump. The case is then treated in the first position, &c., as just described for recent bowing of the thigh.

(3) *Passive moulding* by treatment in the first position—i.e., continuous pulling and the help of slings or pressure pads, which help to push the bent thigh straight. This method often, in combination with active moulding, is the method to be preferred. For upper-third cases the net-bed is most successful. This method, again, depends for its success on the time since the fracture and the amount and quality of the new bone formation.

Pte. R., admitted 13 weeks after simple fracture of upper third. Firm union. Much outward bowing due to abduction of upper fragment. (Fig. 3.) Shortening 1¾ in. Treated on net-bed with 24-in. drop. Skiagram three days later showed no improvement. Ten days later some alteration in position had taken place quite distinctly. After 14 days' continuous pulling, the alignment as shown in Figs. 11 and 12 was obtained. Shortening now ½ in. Bowing absolutely corrected. Treatment, before walking in a calliper, lasted nine weeks.

Pte. Y. Compound fracture, mid-third, of several months' standing. Wound healed. No overlap of fragments, firm union. Net-bed had to be used owing to the outward bowing of the femur being too great to allow of the application of a Thomas splint. Shortening 5 in. Ten days later a flush appeared around the scarring. T. 103°. The flush spread up and down the thigh in the usual way, then subsided in three days. X rays showed the femur straightening out, and four weeks' pulling produced the desired result. The second position was maintained for three weeks. Deformity corrected; shortening 2 in. To prevent the tendency to bowing the thigh was put in plaster, over which a walking calliper was worn. Suppuration would probably have ensued in this case if osteotomy, or cracking the femur across, had been done. A similar result might have followed forcible moulding, so the method of passive moulding was probably the shortest and the safest in the long run.

(4) *Osteotomy.*—Cases of bowing with a great deal of overlap should be treated by osteotomy through the plane of union, as described below.

Pte. C. (Figs. 5 and 6) shows the results of such treatment on a net-bed. Besides the angulation present there was 4 in. of shortening. The result was a perfect thigh with 1½ in. shortening.

Pte. W. had similar treatment, except that it was thought better to wire the fragments together to hold them in position until union occurred. The overlap was very small, the shortening being due almost entirely to the extreme abduction of the upper fragment. Profuse and long-continued suppuration followed operation. Shortening reduced from 3½ in.–⅝ in. Deformity corrected.

*Osteotomy the Operative Technique.*

The operative technique, as adopted by Mr. Harold Wilson for the treatment of malunion, is as follows:—

A large incision (6 in. to 8 in.), utilising the excision of a scar or unhealed sinus when these are present, is

made on the outer side of the thigh. The incision is so placed as to enable the lower end of the upper fragment to be freely exposed, for the latter serves as a guide for the insertion of the osteotome into the plane of union. The lower fragment usually lies deep to the other and on its inner side, its upper end lying high up when there is much overlapping. The incision cuts cleanly through the skin, fascia lata, and muscle, down to the bone, incising the periosteum from end-to-end of the wound. Bleeding from several arteries, branches of the external circumflex, is often severe and these require tying. It is better to work without a tourniquet.

The thickened periosteum is elevated completely off the fragments, a scalpel being necessary in places where scarring binds the periosteum down. The periosteum having been raised and a free exposure of the site of union obtained, a broad, slender Albé osteotome 2 in. wide is inserted under the lower end of the upper fragment if possible, and the junction of new bone between the fragments divided carefully in an upward direction. Just how the osteotome is placed depends, of course, on the disposition of the fragments, the aim being to divide the new bony cement and not the original main fragments. The latter are liable to splinter if care is not taken, and one object of the broad osteotome is to try and prevent this.

An assistant now holds the foot and moves the leg as directed, to enable the operator to make sure that division is complete and to give him an idea how the fragments are eventually going to lie in relation to one another when extension is applied. Any scar tissue or props of bone, inhibiting free movement or preventing apposition, are removed. In some cases simple division may be all that is necessary. In others, division of union and shaping of the ends of the bone may be deemed advisable, due allowance being made for the subsequent lengthening which will occur as the result of continuous extension. In others, again, division and the free removal of props of new bone (see Figs. 9 and 10) is necessary before correct alignment by pull is possible, as these bony growths keep the fragments apart. The wound is irrigated with hot saline and tags of tissue removed. The muscle and covering fascia are sewn up with continuous catgut and the skin sutured, drainage being provided by a large tube carried down to the bone at the upper end of the incision. An additional tube is sometimes inserted about the middle of the incision, or posterior drainage is provided, especially when suppuration is expected. The limb is then put up into the first position in a Thomas's splint or a net-bed, as the case requires, and treated as an ordinary fractured femur. In simple malunited fractures, or when no suppuration is expected, the drainage-tubes are removed in 48 hours.

*Further treatment.*—Most of the further treatment has been described above. An X ray is taken three or four days after the operation, and any adjustment required is made then. Large quantities of callus are usually throw out in these cases of osteotomy, and there is little fear of non-union provided the suppuration problem is dealt with effectively. Thirteen weeks usually sees the patient on his feet in a walking calliper, although a small sinus may still be present and the case may require a sequestrotomy at a later date. The skiagrams shown are typical examples of the results obtained.

### *Summary of Methods of Treatment for Malunion.*

**(1) Deformity with much overlapping (i.e., shortening): Osteotomy through plane of union.**

**(2) No deformity but much overlapping (2 in. or more): Osteotomy through plane of union.**

**(3) Deformity with little or no overlapping (recent case): (*a*) Moulding into position; (*b*) or actually cracking the bone across and treatment by splinting and extension.**

**(4) Deformity with little or no overlapping (old case with firm union): (*a*) Re-fracture if possible without an open operation; (*b*) open osteotomy.**

**In conclusion, I desire to express my thanks to Sir Anthony Bowlby for the introduction. To Mr. Harold Wilson, who initiated the femur work in this hospital and was until recently in charge of the femur wards, I am deeply grateful for kind and useful guidance. Lieutenant-Colonel R. J. W. Oswald, O.B.E., R.A.M.C.T., commanding the 1st London General Hospital, has kindly consented to allow the publication of these cases.**

*Showing Results following Osteotomy.*

| Case No. | Region of fracture. | Condition of wound at operation. | Suppuration after operation. | Shortening before and after operation. Bef. | Af. | Knee flexion before and after operation. Bef | Af. |
|---|---|---|---|---|---|---|---|
| 1 | Upper third. (Sinclair net-bed.) | Healed 2 mos. | Moderate. | 4½ in. | 2½ in. | 0° | 20° |
| 2 | | ,, 3 ,, | ,, | 4¼ ,, | 1¼ ,, | 5° | 15° |
| 3 | | ,, 10 ,, | Slight. | 3¾ ,, | 1½ ,, | 90° | 90° |
| 4 | | ,, 4 ,, | Severe and prolonged. | 3½ ,, | ⅞ ,, | 30° | Uf. |
| 5 | | Simple fracture. | — | 1¾ ,, | ¼ ,, | 5° | 30° |
| 6 | Middle third. | Unhealed. | Slight. | 3 ,, | 1 ,, | 0° | 30° |
| 7 | | Healed 5 mos. | Nil. | 2⅞ ,, | ½ ,, | 10° | 45° |
| 8 | | ,, 4 ,, | Moderate. | 3¼ ,, | 1⅛ ,, | 10° | 45° |
| 9* | | Unhealed. | Severe. | 4 ,, | 1½ ,, | 5° | 30° |
| 10 | | Sinus c. sequestra. | Moderate. | 4½ ,, | 2 ,, | 5° | 20° |
| 11 | | Healed 5 mos. | Slight. | 2⅞ ,, | 1⅛ ,, | 15° | 30° |
| 12 | | ,, 4 ,, | Moderate. | 5 ,, | 2 ,, | 5° | 20° |
| 13† | | ,, 6 ,, | Nil. | 2⅝ ,, | ½ ,, | 10° | 60° |
| 14‡ | | Unhealed c. sequestra. | Profuse. | 7 ,, | 1½ ,, | 5° | Uf. |
| 15 | Lower third. | Simple fracture. | — | 3 ,, | Nil. | 15° | Uf. |
| 16 | | ,, ,, | — | 2½ ,, | 1¼ in. | 35° | 35° |
| 17 | | Healed 2½ mos. | Moderate. | 4¾ ,, | 4 ,, | 0° | Uf. |
| 18 | | ,, 8 ,, | ,, | 3¼ ,, | ¾ ,, | 90° | 60° |
| 19 | | ,, 3 ,, | Severe. | 3½ ,, | 1⅞ ,, | 10° | 30° |
| 20 | | ,, 3½ ,, | Nil. | 2 ,, | Nil. | 10° | Uf. |

* See Figs. 5 and 6. † See Figs. 9 and 10. ‡ See Figs. 3 and 4. Uf. = Unfinished.

*Showing Results following Moulding (see Figs. 11, 12).*

| Case No. | Kind of fracture. | Time between date of fracture and moulding. | Shortening before and after operation. Before. | After. |
|---|---|---|---|---|
| 21 | Upper third shaft. Gunshot wound. | 4 weeks. | 1 in. | ½ in. |
| 22 | ,, | 1 year. | 2 ,, | ½ ,, |
| 23 | Pulping of trochanters. Gunshot wound. | 18 weeks. | 2½ ,, | 1⅛ ,, |
| 24 | ,, | 12 ,, | 2⅜ ,, | ¾ ,, |
| 25 | Pulping of upper third shaft. Gunshot wound. | 7 ,, | 1½ ,, | 0 |
| 26 | Upper third shaft. Simple fracture. | 8 ,, | 1⅛ ,, | ½ ,, |
| 27 | ,, | 4 ,, | 1 ,, | 0 |
| 28* | ,, | 14 ,, | 1¾ ,, | ¾ ,, |
| 29 | Middle third shaft. Gunshot wound. | 30 ,, | 5 ,, | 2¼ ,, |
| 30 | ,, | 14 ,, | 3 ,, | 1½ ,, |

* See Figs. 11 and 12.

The upper third cases were all treated on a net-bed, for periods varying from 6 to 12 weeks. In all cases the deformity present was corrected, and thereby the limb considerably lengthened.

### DESCRIPTIONS OF ILLUSTRATIONS.

FIG. 1.—Method of extension by screws in tibia.

FIG. 2 (Case 14 in table).—Showing extreme flexion and abduction of upper fragment. Union firm. Sinuses c. sequestra present. Treated by wedge-shaped osteotomy from outer side; sequestra removed at the same time. (Screw extension to tibia.)

FIGS. 3 and 4.—X ray of Case 14. Before operation and three weeks after operation. Result shown in table.

FIGS. 5 and 6.—Before and after osteotomy. Showing upper fragment abducted, flexed, and externally rotated. (See Case 9 for result.)

FIGS. 7 and 8.—Before and after operation. Lateral views. Shows great overlap of fragments, and then reduction in the finished result. (Case 8.)

FIGS. 9 and 10.—Shows necessity of removing the "bony props" during operation. Also shows cavity in femur c. debris. (Case 13.)

FIGS. 11 and 12.—Before and after "moulding" on a net-bed. (Case 28.)

FIG. 1.

FIG. 2.

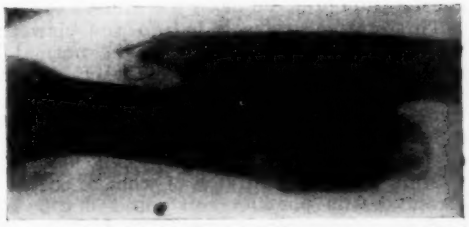
FIG. 3.

FIG. 4.

FIG. 5.

FIG. 6.

FIG. 7.



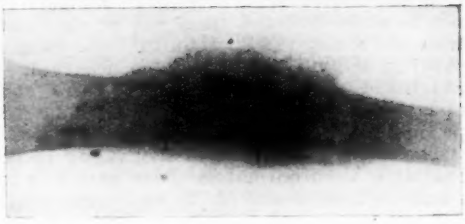


FIG. 8.

FIG. 9.

FIG. 10.

FIG. 11.

FIG. 12.

***For descriptions of illustrations see opposite page.***

# THE MEANING OF TACHYCARDIA.

BY R. McNAIR WILSON, M.B., CH.B. GLASG.

*(Read before the Fellowship of Medicine.)*

AFTER the recent influenza epidemic a number of cases presented themselves in which a rapid pulse-rate appeared to be the chief symptom. The clinical picture was that of convalescence, a rather slow convalescence. The patients tended to be breathless and occasionally complained of feeling giddy. If their attention had been called to their pulses they usually showed anxiety at the fast rate. On the other hand, they were often quite unaware that their pulses were quick at all. Many of them were apparently well and capable of considerable exertion. Other cases of tachycardia have been met with in patients suffering from dysentery, chronic malaria, chronic trench fever, and other diseases.

The chief physical sign is the quick pulse, which may reach 120 or higher, but which is commonly between 90 and 110. This pulse quickens still further on exertion, running up often to 160, as recorded by the polygraph. Moreover, there is a normal "release" with atropine which, when given in doses of 1/33 gr. subcutaneously, produces an acceleration of 20–25 beats a minute.

This normal release led to the view that the vagus nerve in these cases is normal in all respects, but evidence gradually accumulated which pointed to a different conclusion. It was found that if the patients were instructed to take a long deep breath and hold it marked slowing of the pulse (Fig. 1) or a marked loss of pulse volume with quickening was wont to occur. After atropine this phenomenon could not be elicited. (Fig. 2.) Moreover, in a series of controls who had not recently suffered from any acute illness and who were not the victims of "rheumatism" no slowing and no loss of volume occurred. It was concluded that the phenomena were abnormal, and that they depended on the vagus for their production.

The next question is: The vagus is not less excitable than normal in these cases; is it more excitable than normal? It was argued that there are two functions of the heart which are distinct, augmentation and acceleration. Augmentation is accomplished when a more prolonged or larger diastole is followed by a larger systole. Both cardiac nerves, the vagus and the sympathetic, take part in this mechanism, the vagus by increasing the length of diastole, the sympathetic by responding in systole. Acceleration, on the contrary, is a purely sympathetic phenomenon. Now the effect of atropine is, for the moment, to inhibit the vagus, and so to cause the nervous mechanism of augmentation to break down. Thus acceleration alone remains if the circulation is to be maintained. This is the so-called "release of the pulse" under atropine. If, however, atropine were to be given in a dose small enough not to inhibit the vagus but somewhat to lower its excitability, we should discover by the result whether or not the nerve was hyper-excitable in those cases of tachycardia. For if the tachycardia should be due to an excessive vagus pull compensated by acceleration the act of lowering the excitability of the vagus to normal must cause the pulse to slow down; compensatory acceleration would no longer be necessary.

Four cases with pulse-rates at rest, varying from 108 to 85, were selected; all these showed tachycardia when not at rest, and one control who was healthy was added to the number. A dose of 1/200 gr. atropine was given intravenously. The results are shown in Fig. 3.

It was then seen that a very small dose of atropine was capable, in these cases of tachycardia, of slowing the pulse markedly. In the control case (*b*), on the contrary, quickening took place. Clearly, then, a slight lowering of vagus excitability produced slowing, or, in other words, the acceleration was compensatory to excessive vagus action. Numerous other experiments on the same lines were carried out with the same results.

### *Function of the Vagus.*

It appeared that the conception of the vagus, which was expressed by Luciani, the Italian physiologist, as the "nerve of diastole," was justified. For this nerve would not seem to be inhibitor in the narrow sense, but rather to act by increasing the filling time of the heart in response, no doubt, to stimulation from the cortex. A vagus "pull" thus initiates a period of increased cardiac effort, what is spoken of as increased "output per beat." But a prolonged diastole with consequent increased filling of the heart presupposes a more powerful systole. In other words, the whole level of cardiac activity is raised. If the heart, on the other hand, should not be able to make this response in each individual beat it will require to add acceleration to augmentation—it will require, that is to say, to increase output per minute, since output per beat is not sufficient.

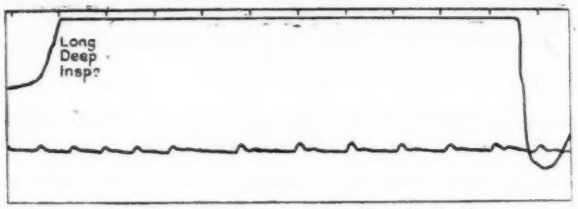
In cases where the vagus is hyper-excitable there will always be a tendency every time that influences pass from the cortex to the medullary centres—i.e., on excitement or calls for effort—for the vagus to overdo its part and to prolong diastole unduly. The result must be a compensatory acceleration if the necessary level of activity is to be maintained. Professor F. A. Bainbridge, dealing with the purely muscular question, has recently written:—

> "In response to a moderate increase in venous inflow a comparatively slight dilatation enables a powerful (thick-walled) ventricle to increase considerably its output per beat, and still to empty itself almost completely at each beat. Hence a slight increase in the pulse-rate will bring about a sufficiently large output per minute to prevent any accumulation of blood on the venous side, and therefore to prevent an appreciable rise of venous pressure. Placed under the same conditions a feeble (thin-walled) ventricle, even when dilated to its physiological limit, may be unable greatly to increase its output per beat and may be far from empty at the end of systole. In these circumstances considerable acceleration of the pulse will be necessary to increase the minute volume of the heart sufficiently to balance the venous inflow. In this way acceleration of the pulse can compensate for lessened contractile power in maintaining the output of the heart per minute."

The work described above suggests that an over-active vagus imposes a similar strain on a heart not necessarily weakened at all. But there is another aspect of the question, which must now be introduced. During the work on tachycardia a case was encountered, tracings from which, and from another similar case, are shown. (Figs. 4 and 5.)

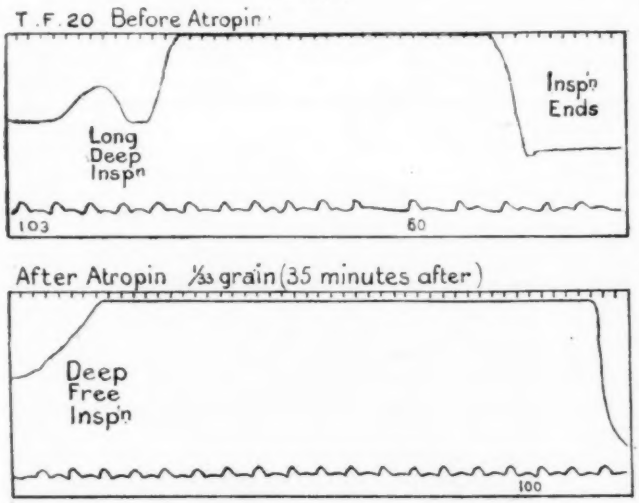
In this case on deep inspiration there was a preliminary slowing from 95 to 75. And then quite suddenly the blood pressure, which had been 120 mm. Hg systolic, fell to 80 systolic, the pulse ran up to 100 and later to 110, and the patient felt faint. Thus both slowing and loss of volume were seen in the same tracing. It appeared that

FIG. 1.




Trench fever. Marked slowing on deep inspiration.

FIG. 2.




Slowing of pulse on deep inspiration, removed by atropine.

vagus stimulation by deep inspiration had in this case:

1. Made it impossible for the compensatory acceleration, the tachycardia, normally present to be kept up. Consequently the pulse slowed and acceleration was dropped, leaving only augmentation. There was a fall of blood pressure of 5–10 mm. Hg systolic.

2. Finally placed the heart under such a strain that the contractile power was unable to cope with the over-filling, systole for diastole, so to speak. The organ was incapable, that is, of emptying itself or nearly emptying itself in a single systole. The mechanism of augmentation had, in fact, broken down.

Thus excessive vagus stimulation produces the same effect as inhibition of the vagus by atropine. The reciprocal action of vagus and sympathetic can be dislocated in two ways—by "cutting out" the vagus, or by increasing the irritability of this nerve to an excessive degree. In both cases the only resort left to the heart is acceleration, which at once takes place.

*Types of Acceleration.*

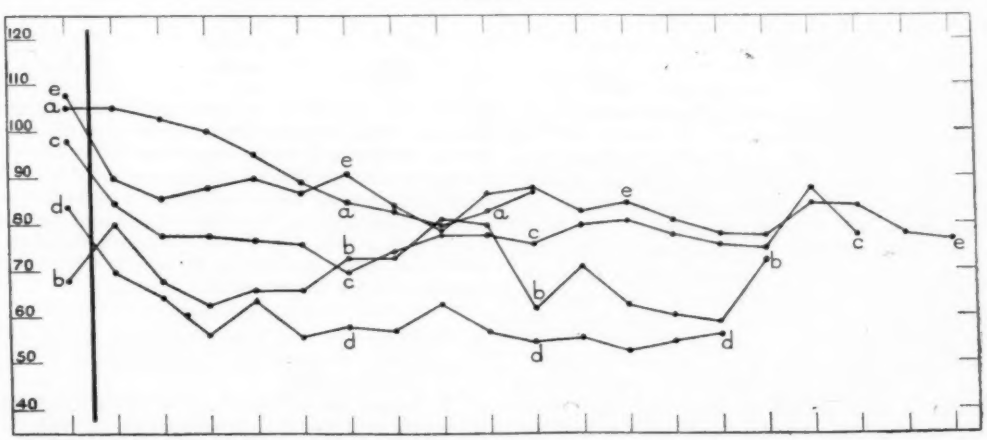
There are thus three types of acceleration, all differing in their means of production:—

1. The type represented by the ordinary case of tachycardia, in which acceleration has been added to augmentation. The blood pressure is usually normal or slightly higher than normal—e.g., 140 mm. Hg systolic.

2. The type occurring when augmentation is abolished by atropine. Blood pressure slightly less than normal.

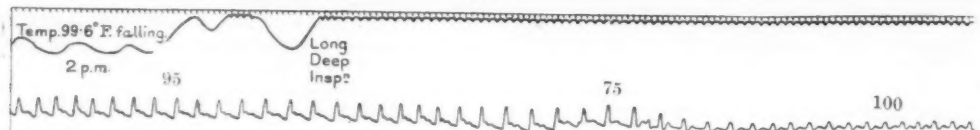
3. The type occurring when augmentation is abolished by excessive irritability of the vagus. In this case the blood pressure falls sharply, to 80 mm. Hg in many cases, and the patient feels faint. This type of acceleration is seen in the very severe cases of septic fevers, in pneumonia which is running to a fatal issue, and in other cases. It can also be

FIG. 3.




Graphic records of pulse-rate after a dose of $\frac{1}{200}$ gr. atropine intravenously. Tracings taken with polygraph. The perpendicular line shows point of injection. Note the fall in rate in all cases except *b*.

FIG. 4.



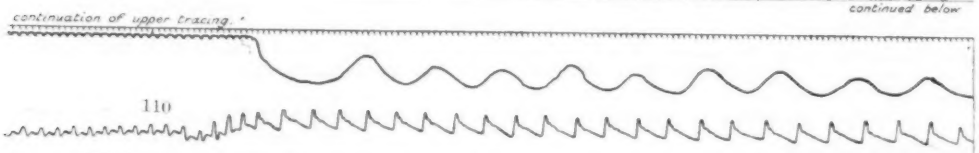
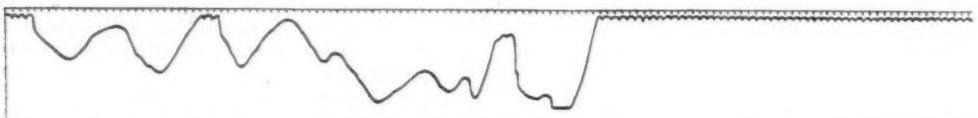
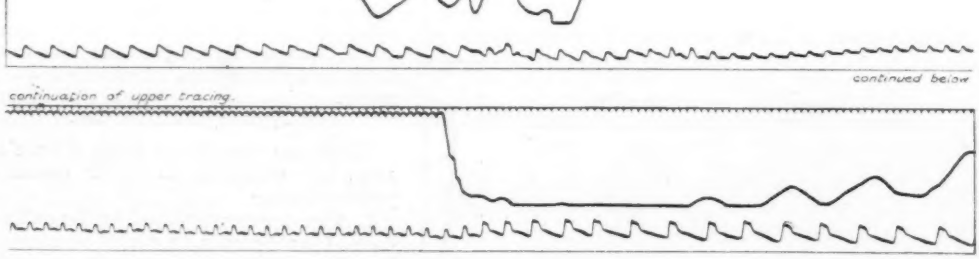



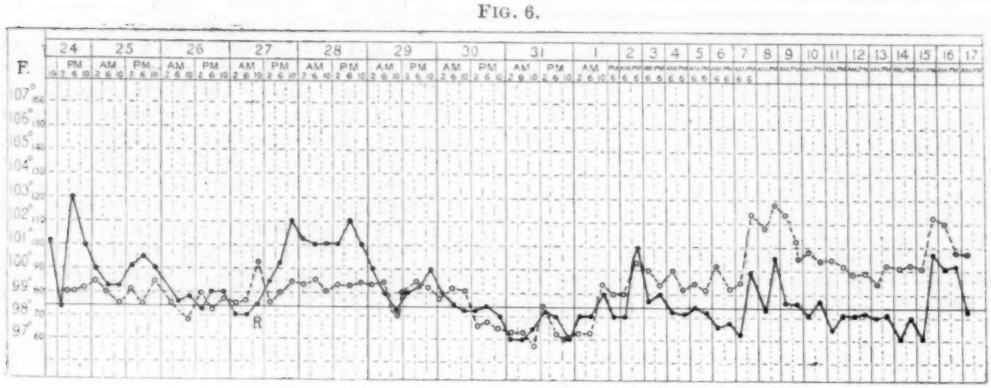

FIG. 5.




Sharp fall of blood pressure in case of trench fever with hyper-excitable vagus on deep inspiration.

FIG. 6.




Temperature and pulse in trench fever.

produced, as has been shown, by vagus stimulation in some cases of tachycardia.

Tachycardia by this showing is a compensation to a hyper-excitable vagus. It remains to suggest that the vagus is so rendered hyper-excitable by the action of a toxin. In the accompanying chart from a case of trench fever this can be seen. (Fig. 6.)

It will be observed that across the chart there is a gradual decline of the temperature curve and a gradual rise of the pulse curve. Moreover, the acceleration of the pulse towards the end of the chart increases with each slight rise of temperature. If the views enunciated are correct, the explanation is that while at first the toxin was powerful enough to render the vagus unduly excitable, and so to prevent acceleration towards the later stage of the illness, the toxin had lost power and acceleration could occur. In point of fact, the blood pressure, which had been subnormal at the beginning, became normal later when the compensatory acceleration was established. The same tendency to the establishment of tachycardia as fever declines can be observed in many influenza charts and in other diseases. When tachycardia is established the patient is better in his strength than before this takes place.

*Conclusions.*

1. Tachycardia in a man who is up and about is compensatory in character, the addition of acceleration to augmentation.

2. It points to the presence of a mild infection, and can be removed only by removing the infection.

3. There is evidence that the action of the toxin is directly on the cardiac vagus.

# DISLOCATION OF CERVICAL SPINE.

## REDUCTION UNDER ANÆSTHESIA.

BY J. PHILIP BUCKLEY, M.D. CANTAB., M.S. LOND., F.R.C.S. ENG.,
HONORARY ASSISTANT SURGEON, MANCHESTER ROYAL INFIRMARY.

IN June, 1918, an officer was admitted under my care at a base hospital in France, his field medical card bearing the diagnosis, "Injury to right shoulder." I saw him in bed soon after admission, and finding him cheery and apparently fit, and a cursory examination of the right shoulder revealing no gross lesion, I turned my attention to apparently more serious cases. Next morning when I came into the ward he was up and walking about. It was obvious at the range of the few yards which separated us when I observed him that he had a marked deformity of the cervical spine. His head was held forwards with the chin approximated to the chest, and there was a definite angular deformity at the back of the neck. I at once ordered him back to bed.

The history of the case was as follows. He was riding a motor-cycle in the dark, and coming into

FIG. 1.—Showing dislocation of cervical spine between fourth and fifth vertebræ.

contact with another vehicle he was thrown off. He was temporarily "knocked out" and was taken back to his unit, where he was seen by the medical officer, who sent him to bed. As he was not better in the morning he went to the C.C.S. He reached the base about three weeks after the accident, and when I gently reproved him for having got up he seemed surprised, and said he had been accustomed to get up at the C.C.S., and had even played badminton there.

I had an X ray photograph taken. (Fig. 1.) This shows a dislocation of the cervical spine between the fourth and fifth vertebræ. There appears to be no gross bony lesion. The articular processes of the fourth and fifth vertebræ are just clear of one another; the spinal column above the lesion is displaced forwards, and rotated forwards to an angle of 140° with the spine below the lesion. The patient was very cheerful and felt well, and beyond the marked deformity, slight referred pain over the right shoulder (hence the F.M.C. diagnosis), and slightly increased knee-jerks did not present any symptoms of spinal injury.

*Reduction under Anæsthesia.*

As it seemed a pity to condemn a fine young man to live the rest of his life with his chin sunk upon his chest, after careful consideration I decided to attempt reduction under an anæsthetic. I first made a poroplastic splint to embrace the back of his head with two side wings around the temples, to extend down the neck and well down the dorsal spine, with two lateral wings to embrace the chest. I made this to fit a hospital orderly about the same size as the patient. Careful precautions being taken to keep the head, neck, and body fixed during the process, he was anæsthetised. When he was well under the anæsthetic I exerted traction on the neck, at the same time making leverage backwards. Though there was no reduction "with a click," yet I was able so far to effect a reduction that external signs of the deformity disappeared. The splint which I had prepared was then applied with the aid of strapping and a bandage. This splint I afterwards reinforced with a strip of metal

FIG. 2.—Showing natural curve of neck restored.

riveted to it along the mid-line. He suffered no ill-effects from the manipulation.

The result of the manipulation is shown in the X ray taken subsequently. (Fig. 2.) It will be seen in this that the natural curvature of the neck has been restored; there still appears to be some displacement forwards of the fourth upon the fifth cervical vertebra, but I think this is not as great as at first sight it may appear, since it will be noted that the front of the body of the fifth vertebra shelves more abruptly upwards and backwards than the remainder of the vertebræ, rather suggesting that it has been damaged by the body of the fourth vertebra grinding over it in the act of dislocation, although no loose fragment of bone can be seen.

Regarding the after-history of this case I have no information beyond the fact that, about nine weeks after the above-mentioned manipulation, I met my recent patient, still wearing my splint, but quite happily dining, at a restaurant. I spoke to him, and he told me that he was doing all right, but that his neck still felt weak if he left off the splint.

# A CALCULUS OF UNUSUAL SIZE

## REMOVED FROM THE URETER BY OPERATION.

BY FRANK KIDD, F.R.C.S. ENG.,

SURGEON TO, AND SURGEON IN CHARGE OF THE GENITO-URINARY DEPARTMENT, LONDON HOSPITAL.

**I HAVE never seen a stone as large as the one here described removed from the pelvic portion of the ureter, and I should think it must be a record. A stone of such dimensions could hardly have developed in a normal ureter. The ureter was dilated because of the congenital stricture of its mouth, which explains how it became possible for so large a stone to grow therein. Apparently the kidney and ureter had become infected with a mild strain of staphylococcus, which had decomposed the urine and caused a deposit of phosphates which had developed into a stone; in other words, the stone was probably secondary not only to the stricture, but also to an infection.**

X ray photograph showing actual size of calculus.

The patient, a young man of 18 years, was admitted to my wards at the London Hospital on August 31st, 1919. He had previously been seen by Mr. A. J. Walton, who very kindly transferred him to my care. In 1907 he had had a stone in the bladder, which had been crushed and removed. In 1908 he had had slight pains in the right loin. After that date he had had no more trouble until eight weeks before admission. At that time a dull, aching pain developed in the right iliac fossa, which lasted four days. A few weeks later the pain recurred and became more acute and was sufficiently bad to lead him to come up for advice and relief. He had never had increased frequency of micturition or any other symptoms.

On examination the urine was acid, contained no albumin, but a moderate haze of thin pus. The deposit consisted of red blood corpuscles, pus cells, acid phosphate crystals, and the *Staphylococcus albus*. The X ray examination showed a large oval shadow in the region of the upper portion of the right pelvic ureter, as shown in the appended photograph.

On Sept. 4th I administered spinal anæsthesia. With the cystoscope I could see prolapse of the mouth of the right ureter, with cyst formation and intermittent ballooning of the cyst as the urine came down from the kidney. This, although a rare condition, is well recognised by urologists, and has been named "ureterocele." The primary condition is a congenital stricture of the mouth of the ureter, with secondary dilatation of the ureter and prolapse of the dilated ureter into the bladder. By rectal examination the dilated ureter could be felt, but the stone was too high up in the pelvis to be felt.

*Operation.*—I cut down in the right groin through a muscle-splitting incision 3¼ in. long, as described by me in THE LANCET of June 7th, 1913. The peritoneum was pushed aside and the ureter identified at the pelvic brim as a thin-walled dilated tube the size of a coil of small intestine. The stone lay below the pelvic brim, fixed to the side of the pelvis by peri-ureteric fibrosis. The ureter was opened well above the stone by a longitudinal incision 1½ in. long, and pus and urine gushed out. The stone lay fixed in a large pouch; the upper end of the pouch was cut open and the stone was easily removed. Bougies could then be passed into the bladder. The wall of the ureter was re-stitched with fine catgut in two layers, a small tube was placed at the site of the stitching and brought out through the abdominal wound; the abdominal wound was stitched up with catgut in layers. The operation took 30 minutes.

*Course.*—A few drops of urine leaked from the tube for 24 hours; after that there was no more leakage, and the tube was removed. On the fourth day the stitches were removed; on the eighth day the wound had healed by first intention, except for the tube hole. The patient

left the hospital on the sixteenth day, soundly healed and with no further symptoms. The stone measured 2¼ in. in its long diameter and 1 in. in its short diameter, and weighed 1 oz. It consisted of phosphates, with a trace of oxalates, and contained no cystin, no carbonate, and no uric acid.

*Comments on the Case.*

It is interesting to note how very few symptoms had been caused by the stone. As a general rule, the larger the stone the fewer the symptoms. Since I wrote my paper on the removal of ureteric stones I have seldom found it necessary to operate for stones in the lower portion of the ureter. Most ureteric stones in the pelvic portion of the ureter lie just above the bladder, and are prevented from entering the bladder by the narrowness of the opening of the lower end of the ureter. I find by experience that I can slit up the mouth of the ureter with a pair of operating scissors, through the operating cystoscope, lubricating the stone with parolene, and that a few days or weeks later these stones are passed naturally without any further trouble. In this case the stone was so large that it was clearly necessary to operate by open incision.

B. S. Barringer[1] describes a case of double ureterocele with a small stone lying in one of them. He cut off the top of the ureteroceles with the operating cystoscope, and the stone was then passed naturally. I have previously seen two cases of ureterocele; in one I treated the condition by open operation, and in the other I cut off the top of the projection through the operating cystoscope; on both occasions results were satisfactory. I hope to operate at a later date on the ureterocele present in the case reported here.

## DIVERTICULITIS.

*Being some Remarks made in the Course of a Discussion at a Meeting of the Section of Surgery (Subsection of Proctology), Royal Society of Medicine, on Jan. 7th,*

BY G. GREY TURNER, M.S. DURH., F.R.C.S. ENG.,
HONORARY ASSISTANT SURGEON, ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

My first introduction to the subject under discussion was in the year 1903, when, as surgical registrar, I saw Professor Rutherford Morison excise what was supposed to be a malignant growth of the sigmoid in a man of 60. On examining the specimen I found that it was an example of diverticulitis. There were 13 diverticula, with great inflammatory thickening of the bowel wall, but no lesion of the mucous membrane. The man died, and at the post-mortem many diverticula were found from about the middle of the transverse colon to the point at which the sigmoid had been divided, but none in the lower segment of the bowel. The condition was at once recognised, and was correctly described in the hospital notes.

This case is of some interest, because it has been stated by Sir Berkeley Moynihan in his Cavendish lecture for 1912 that he operated in 1906 "upon the first case recognised as chronic diverticulitis of the sigmoid flexure in this country." I always regret that the example to which I have referred was not published at the time, for it would have stimulated an earlier interest in this particular subject. But there was really no excuse for ignorance in the minds of inquiring surgeons, for a well-illustrated abstract of the paper by Ludwig Schreiber appeared in the *Medical Review of Reviews* about that time, and in THE LANCET for Oct. 24th, 1903, Sir John Bland-Sutton wrote a most suggestive paper "On the Effect of Perforation of the Colon by Small Foreign Bodies, especially in relation to Abscess of an Epiploic Appendage."[1]

Since then several examples have come under my notice, and they have illustrated all the clinical conditions which have been described.

*Description of Cases.*

I would like to refer to three cases of particular interest.

The first is that of a female patient, aged 34 years, on whom I operated in 1904 for what was diagnosed as appendicitis with abscess.[2] I found a hard mass in the ascending colon which so closely simulated a malignant new growth that I thought it best to excise it. On examining the specimen I found the explanation to be an inflammation around a diverticulum in the commencement of the colon. There was also another quiescent saccule on the caput. No other diverticula were noticed in the large bowel during the course of the operation. The patient made a good recovery, and was living and well 15 years later.

The second case must be almost unique. It is that of a man 57 years of age who was admitted to the Newcastle Infirmary in the year 1902 suffering from retention of urine with general peritonitis. As it had not been found possible to relieve the condition by catheter an attempt had been made at his home to puncture the bladder suprapubically, but only liquid fæces escaped through the trocar. The man soon died, and at the post-mortem I found what I then took to be a malignant growth of the sigmoid, and just above this growth was a large hole leading into the bowel; there was fæcal extravasation with general septic peritonitis. On looking for an explanation I discovered, free in the recto-vesical pouch, a large gall-stone which had evidently ulcerated through the sigmoid just above the growth. An examination of the gall-bladder showed a second calculus projecting from that viscus into the hepatic flexure. The condition was interesting enough, and the specimen was put aside for further investigation, but amid an abounding wealth of pathological material it was neglected until the year 1908, when I was especially interested in the question of gallstone ileus. On re-examination I then found that the condition was a typical example of diverticulitis, and that there was no question of new growth. Unfortunately the specimen has been mislaid, but I am able to show you a drawing which was made at the time.

The third case shows that peritonitis may occur as the result of ulceration of even a small and almost isolated diverticulum, for in this patient only three such diverticula were found after a careful search of the bowel, cut in serial sections.

*Ætiology, Diagnosis, and Treatment.*

As regards ætiology, I have the conviction that the condition will ultimately prove to be congenital in origin. This is in accordance with the general origin of the diverticula with which we are familiar in the various parts of the alimentary canal and in the bladder. In one of my cases, a man who died from peritonitis and who presented diffuse diverticula in the large bowel (42 in number), there were also two large sacculi in the bladder in relation to the left ureter. At the time the latter were attributed to an enlarged prostate, but extended experience of vesical pouches has led me to realise that in many cases these are certainly congenital in origin. We must freely admit that in their early stages all diverticula are probably

[1] Transactions of the American Association of Genito-Urinary Surgeons, May, 1914.

[1] Since hearing Sir John Bland-Sutton's remarks at the discussion I have taken the opportunity of again carefully reading his paper, and find it full of renewed interest. There is an illustration of a diverticulum of the colon, and some of the cases were undoubtedly examples of diverticulitis, though the distinguished writer did not at that time divine what he now believes to be the correct explanation.

[2] A Case of Tuberculous Ulceration of the Ascending Colon Simulating Appendicitis, THE LANCET, Sept. 16th, 1905.

symptomless, but that they are progressive and tend to give rise to trouble in the course of years. In fact, the distension which precedes pathological symptoms may not be quite complete even in late life, and this was borne out by an example of diverticulum of the duodenum the size of a thumb in a woman of 60, in which the mucous membrane at the apex was so thrown into folds as to suggest that it was capable of very much freer distension than had ever taken place.

In the matter of diagnosis I have been struck by the very clear history which one can usually obtain *after* the event. In one case in which I excised the bowel under the impression that we were dealing with a malignant growth the man subsequently gave a wonderful history of recurring slight inflammatory troubles extending over a period of as long as ten years. A careful scrutiny of the histories furnish many points which help in the recognition of the earlier stages of the disease.

There is a further case bearing on the question of treatment which I should like briefly to mention.

It was that of a lady, 55 years of age, who gave a six months' history of pelvic inflammatory trouble, with severe pain of eight days' duration. A big tender mass was felt in the left side, and a diagnosis of tubal inflammatory mischief was made with some confidence. At the operation I found that the mass originated in the sigmoid, and after separating the adhesions sufficiently to allow of it being properly examined I detected multiple diverticula in the bowel higher up, giving a clue to its origin. The affected portion of bowel was too low down to excise safely and make an anastomosis, and I did not at that time think that the condition justified excision with a deliberately permanent colotomy, so I determined on the latter expedient in the hope that the rest would lead to such a degree of resolution that the continuity of the lumen could be restored safely at a later date. After the operation the lower end of the bowel was kept free by repeated irrigation, but an attempt to pass a tube from the anus to the colotomy, or vice versa, was never successful. Six months later the involved portion of bowel would easily admit the finger, so the colotomy was closed. The patient remained perfectly well for 18 months, the bowels being opened regularly and without any trouble. At the end of this time she developed a very definite obstruction which would not yield to ordinary measures, and I had to re-make the colotomy. After this the patient always took great care of the lower bowel, and in consequence kept very well for nearly five years, when she commenced to have a little discomfort, and occasionally to pass a quantity of mucus per anum. Just seven years from the original onset of her trouble she again developed an inflammatory condition round about the lower segment of bowel, terminating in a large abscess which pointed and was opened at the lower part of the abdominal incision. The bowel was carefully examined, but there was no sign of new growth, and once again the condition subsided, leaving only a small mucous fistula at the site where the abscess was opened.

As this interesting condition becomes better recognised cases will undoubtedly be brought before the notice of surgeons at a much earlier stage, and we will frequently be called upon to decide what to do when we are confronted with the uncomplicated condition, or with cases of mild recurring inflammation. Under these circumstances in one instance, in a man of 38, I inverted several diverticula and sutured over the peritoneal pocket so as to convert them into polypi; others were too rigid and could not be dealt with in this way, but the patient was given directions as to the necessity of regulating his bowels and for abstaining from food at the slightest sign of discomfort in the lower abdomen. This operation was carried out 18 months ago, and up to the present the patient has had no further symptoms.

Under similar circumstances in a more recent case I squeezed out the contents of one or two diverticula into the bowel, but I found that it was not possible to invert them, and the abdomen was closed. When opportunity offers I would certainly cover up any exposed sacculi with the neighbouring epiploical appendices.

Newcastle-upon-Tyne.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A CASE OF

### ACUTE HYDRO-PNEUMOTHORAX

### COMMUNICATING WITH THE STOMACH.

BY J. W. TUDOR THOMAS, M.B., B.S.LOND., M.R.C.S.,
CAPTAIN, R.A.M.C. (S.R.).

THE following case of acute hydro-pneumothorax, resulting from an old gunshot wound of the chest, is of interest on account of its peculiar features. The patient recovered in spite of a communication between the pneumothorax and the stomach.

The patient was an East African native soldier who had been wounded in the chest by a machine-gun bullet four and a half months previously. The bullet entered 2½ in. outside the left nipple line in the sixth left intercostal space and was taken out through the eighth left intercostal space, 5 in. from the spine. He had no hæmoptysis and was discharged to duty after three months in hospital. During the next six weeks he was quite well, until the last week or so, when he complained of pain in the left side of the chest. The pain became suddenly worse, with severe vomiting, and he arrived at our hospital about two days later in a state of collapse, with no pulse at the wrist and almost in extremis. On examination there was found to be a left pneumothorax, the apex beat being in the right axilla. A needle was inserted, much gas was let out and some fluid. This was repeated in an hour's time, and he was given rectal salines, &c. The next day the chest was again tapped and much air and fluid was let out. The fluid on examination was found to be from the stomach. Intravenous and rectal salines were given and still the patient had no pulse at the wrist.

The next day an incision was made under novocaine in the sixth left intercostal space, letting out the air and fluid. Exploration by the finger showed the lung to be adherent on the outer side near the bullet exit wound. The heart could not be felt, the finger coming up on the posterior surface of the sternum. Passing the finger over the dome of the diaphragm a rift was felt leading down to the stomach. Two rubber tubes were inserted to drain the cavity. Two days later the pulse was quite appreciable at the wrist, and it was decided to do a temporary jejunostomy. The patient could not possibly stand a general anæsthetic, so this was performed under a local anæsthetic, 0·5 per cent. novocaine being used. The fundus of the stomach was found to be adherent to the diaphragm over a large area, The jejunum was brought to the parietal peritoneum, and sutured to it, with a No. 10 rubber catheter inserted and held in position by a purse-ring suture. The pulse and respirations were 120 and 28 before and after the operation. A few days later, by direct observation through the chest wound, using a forehead mirror, the extent of the cavity was investigated, and on the patient swallowing a little water it was observed to flow into the cavity in the chest through the communication with the stomach. A week after the operation a little dilute methylene-blue solution by the mouth

caused no staining of the dressings on the chest wound. At this time the patient had an attack of influenza, which was prevalent. He had severe headache, which was relieved in less than an hour by aspirin gr. x. given in milk by the jejunostomy tube. A fortnight later a little liquid food by the mouth was given and gradually increased, at the same time the feeds by the jejunostomy tube were decreased.

At the end of another fortnight the patient was getting a fair diet of milk and malted milk by the mouth, so the jejunostomy tube was removed, a dry dressing being applied. There was no excoriation of the skin arcund the wound, and in less than a month after removing the jejunostomy tube the abdominal and thoracic wounds were both soundly healed. As the jejunum was brought up to, but not through, the parietal peritoneum, on removing the tube the wound closed up and healed rapidly.

**The patient made a complete recovery, took his ordinary diet without any pain or discomfort, and said he felt exceedingly well. The lung expanded and the cardiac apex beat returned to about the normal position.**

**I am indebted to Lieutenant-Colonel R. F. Standage, I.M.S., Surgical Consultant, East African Field Force, for his advice and assistance in this case.**

---

CASE OF

## SUDDEN COMPLETE PROCIDENTIA RECTI

IN A YOUNG ADULT MALE.

BY W. R. M. TURTLE, M.B., B.S. LOND., D.P.H.,

SENIOR ASSISTANT MEDICAL OFFICER, WHIPPS CROSS INFIRMARY, LONDON, N.E.

**THIS case appears to be of sufficient interest to record, as I believe the sudden formation of a complete prolapse of the rectum to be very unusual in a young adult.**

S. H., a male, aged 26 years, was admitted to the Whipps Cross Infirmary on August 26th, 1919, suffering from complete procidentia recti. The prolapse formed a firm, œdematous, egg-shaped mass, the long axis of which was 5 inches and the short 4 inches. Hæmorrhoids were present in addition.

The history of the case was that once, when a very small child, the rectum came down and had to be replaced by a doctor, but the patient himself had no recollection of ever having had any trouble of this nature, until suddenly, on the day previous to admission, during the act of defæcation, the bowel came down.

On August 27th the mucous membrane of the prolapse was commencing to ulcerate in places. On that day I excised the prolapse by the method, so clearly described in Cheyne and Burghard's "Manual of Surgical Treatment," for "excision of the entire prolapse, when the prolapse involves the whole thickness of the bowel." Hæmorrhage during reflection of the mucous membrane was free, and troublesome to control, owing to congestion of the mass from partial strangulation and the presence of hæmorrhoids. Apart from this the operation presented no difficulty. The peritoneum covering the bowel was stitched to the parietal peritoneum and the cut edge of the bowel to the skin at the anal margin. The external sphincter was, of course, not touched at the operation, and quite half of the internal sphincter was left.

**The patient made a good recovery; the wound healed without suppuration. There was incontinence of fæces for a month, and then control over the sphincter gradually returned. Two months after the operation control was fully established. He was discharged from the infirmary on Nov. 19th.**

**I have to thank Dr. J. C. Muir, medical superintendent, for permission to send the above notes on this case for publication.**

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### CLINICAL SECTION.

THE APPLICATION OF WAR METHODS TO CIVIL PRACTICE.

A MEETING of this section of the Royal Society of Medicine was held on Jan. 9th, Sir ANTHONY BOWLBY, the President, being in the chair.

The PRESIDENT gave an address on the Application of War Methods to Civil Practice, which will be found in full in the present issue of THE LANCET.

*Discussion on the Address.*

Mr. REGINALD VICK said that he had had an opportunity in Salonika of practising primary suture on compound fractures for a period of 18 months while at a general hospital on the Seres Road, to which large numbers of transport *accidents* were admitted. The invariable practice was to do primary suture on these cases, and the results were so uniformly satisfactory as to convince him that this method of treatment was as ideal as anything human could be and certainly as successful. The essentials for success were present—facilities for immediate operative treatment, a good theatre, and no reason for moving the patient until the wound and bones were healed. Since his return to England he had had the opportunity while working under Mr. G. E. Gask in the surgical unit, of treating all compound fractures admitted during their tour of duty. Primary suture had been performed in these cases, and where complete closure of the wound was possible the results were satisfactory. Where, owing to hæmorrhage, complete closure was impossible, secondary suture had usually been required at a later stage. In cases of compound fracture of the skull with the dura unopened, the end-results were excellent. It was important that operation should be performed at once, with complete removal of *all* damaged tissue and perfect splinting with subsequent immobility until healing was complete in cases of fractures of long bones. He had usually used ether in the final stages before closing the wound.

Sir CUTHBERT WALLACE remarked upon the difficulty in applying the Thomas splint in the case of women on account of their clothing. In fractures in civil life there was much more extensive injury to surrounding tissues than occurred in fractures under war conditions.

Mr. W. GIRLING BALL said that much had been done during the war in the bacteriological examination of wounds. In a series of 100 cases at the front treated by delayed primary suture 80 per cent. healed by first intention. Since his return he had endeavoured to carry out the same method of treatment. In the home hospitals cases were too often left to the inexperienced for treatment. This was difficult to avoid unless the house surgeon had been taught by someone who had actually carried out the method. He thought that large wounds such as were so often met with in civil practice were very amenable to treatment by primary suture.

Sir CHARTERS SYMONDS said that he had begun his war work in London, where men were arriving from the Aisne in a highly infected condition. In the case of severe fractures he kept the part in complete rest by putting it up in plaster-of-Paris. When the general inflammation had subsided in from four to seven days he removed the plaster. The wounds were generally found full of pus, but this seemed to act as an effective dressing. In the summer of 1916 he had employed first continuous and later intermittent irrigation. On his return to England he saw the cases from France, and noted the excellent results which followed primary suture. If the wounds were dry and free from pus it was possible to suture at once. He agreed that failure in the Carrel-Dakin method was due to defective technique. Asepsis should be perfect, and the wound should never be touched by the hands.

Mr. A. W. SHEEN said that in India they had received cases from Mesopotamia ten days after wounding. The wounds did not seem to be so infected as those in

France, probably on account of the dryness of the climate and non-cultivation of the soil. They were more like those seen during the South African War. He wished to see improvements in organisation as well as in treatment. The injured arrived at hospital in a very bad condition. In mines, works, factories, &c., there was little organisation for immediate treatment.

Surgeon-General A. CORKER said that he had been struck by the need for the universal teaching of first aid. In the army an endeavour was made to teach first aid to every officer and man. He had lately been on the committee of a school, and though all kinds of subjects were taught hygiene was not in the curriculum. He thought that first aid should be taught to the community at large.

### EXHIBITION OF CASES.

*Sarcoma of the Scapula.*

Mr. PHILIP TURNER showed the case of Sarcoma of the Scapula in a man aged 46. The patient had first noticed and applied for treatment for weakness of the right arm. About the same time he had had tonsillitis. On examination a tumour of the scapula was found, together with enlarged axillary and supra-scapular glands. There was weakness and wasting of the muscles of the right arm. The right tonsil was much enlarged and ulcerated. Two or three weeks ago Mr. Turner thought there was new growth of the tonsil, but he now considered the condition was probably inflammatory, as the tonsil was smaller.

*Fracture of Shaft of Left Humerus.*

Mr. T. P. LEGG showed a case of Comminuted Fracture of the Shaft of the Left Humerus, with unusual nerve complications. The patient was a young man, aged 17, who was knocked down by a motor lorry and run over on Oct. 1st, 1919. On admission to hospital he was found to have a comminuted fracture of the left humerus, about the middle of the shaft, contusions of the left arm and thorax, and to be suffering from severe shock. He was blanched; the pulse was 130 per minute; there was left-sided abdominal pain and slight increase in the area of splenic dullness. These signs gradually abated, though the anæmia persisted for some time longer. The fracture was treated by extension in an abducted position on a "Thomas's ring splint." The signs of injury to the nerves were first observed about the twelfth to fifteenth day, inability to move the fingers being first noticed. On Oct. 24th the splint was removed, as union was taking place, and the arm placed between sandbags in a less abducted position. He was unable to flex the elbow and movements of the wrist-joint were absent. Massage was begun on Oct. 27th and electrical treatment on Nov. 3rd. On Oct. 17th the electrical reactions were tested. There was no reaction in the muscles supplied by the median or musculo-cutaneous nerves, nor in the muscles of the forearm supplied by the musculo-spiral. The reaction of the muscles supplied by the ulnar nerve was diminished. The deltoid reacted. Triceps was not tested. On Nov. 11th he was examined by Dr. S. A. K. Wilson, who reported "definite motor and sensory paresis (not an absolute paralysis of either) in the median, musculo-spiral, and musculo-cutaneous groups. The ulnar is relatively intact." On this date he was encouraged to begin to use his arm. On Dec. 9th the median nerve showed R.D. reaction, and the ulnar and musculo-spiral reacted to reduced faradic current. On the 29th the reactions were unchanged. He could flex the elbow to 90°. Treatment was still being continued.

## SECTION OF SURGERY: SUBSECTION OF PROCTOLOGY.

### DISCUSSION ON DIVERTICULITIS.

A MEETING of this section of the Royal Society of Medicine was held on Jan. 7th, Mr. J. P. LOCKHART-MUMMERY, the President, being in the chair, when Dr. W. H. MAXWELL TELLING read a paper on Diverticulitis, which appeared in full in THE LANCET of Jan. 10th.

Sir JOHN BLAND-SUTTON said that 30 years ago colic sacculi were mainly regarded as pathological curiosities, and our knowledge of their potentialities for evil was a direct result of surgical enterprise. His interest in them was aroused when trying to find an explanation of the phenomenon known as "spontaneous disappearance of abdominal tumours." This matter was discussed in the Royal Medico-Chururgical Society in 1894 by Mr. Greig Smith, and increasing experience in abdominal surgery enabled Sir John Bland-Sutton to learn the part played by colic sacculi in producing localised swellings in the belly, which sometimes disappeared by expectant treatment, and the phrase "spontaneous disappearance of abdominal tumours" also disappeared from surgical phraseology when surgeons learned that acute and chronic diverticulitis, or sacculitis (names as ugly and cacophanous as appendicitis), mimicked many important lesions, especially acute and chronic appendicitis, cholecystitis, tumours of the stomach, sub-diaphragmatic abscess, perigastric abscess, splenic abscess, tubal infections, ovarian abscess, cancer of the uterus, and infected uterine fibroids. The extraordinary feature of sacculitis (or pericholitis) was its mimicry of cancer of the colon. In 1901 he excised the sigmoid flexure of a spinster aged 60 under the impression that it was cancerous. After the operation critical examination of the tumour proved that the supposed cancerous mass was a pericholic mass due to infection of a sacculus caused by a piece of straw. The patient recovered. This, with a case of epiploic abscess, was described before the Medico-Chirurgical Society of Nottingham in 1904, and full details were published in THE LANCET, 1903, ii., 1148. Since that date Sir John Bland-Sutton had seen and operated on many similar cases, and it was clear that in the past patients had submitted to colotomy and colostomy under the belief that they were suffering from colic cancer; subsequently the lump disappeared and the patients survived the operation many years, and at death there had been no evidence of tumour. This admitted of no doubt. Also cases were not uncommon in which a swelling is detected in connexion with the large gut, a diagnosis of cancer is made, and the patient is advised to submit to an operation, but he obstinately refuses, and in due course the swelling disappears, in spite of the gloomiest prognostications of physicians and surgeons of great experience and repute, and the patient lives to mock at his advisers. The disappearance of the mass was due to pus or the exudate finding a channel of escape. During the last ten years acute diverticulitis, especially in the lower abdomen, was recognised with the same certainty as acute and chronic appendicitis. The disquieting feature of these new things in abdominal surgery was the fact that as we grew older colic sacculi tended to increase in number, and as many as 200 had been counted on a colon. Thus diverticulitis was a newly discovered "bane of elders." As prevention was better than cure, it would be the duty of the family medical attendant to encourage men and women after middle life to have efficient sets of teeth and warn them against gobbling indigestible food or bolting hot and unpleasant morsels.

Dr. E. I. SPRIGGS referred to the work of Dr. Maxwell Telling and Dr. O. C. Gruner[1] in 1917, Dr. D. Roberts[2] in 1918, and Dr. J. W. Keefe[3] in 1917, on Diverticulitis, and said that the experience gained at Duff House supported the view that multiple diverticula could be recognised easily in X ray photographs of the colon, but such cases had not been found to be common. In the X ray examination of over a thousand alimentary canals diverticula of the large intestine had been seen six times. He had excluded between two and three hundred early cases from these figures, as they had not learned at that time the importance of taking photographs freely. The proportion, of cases showing diverticula was doubtless understated by these figures, because in some cases the descending colon and sigmoid might not be completely filled at the times of examination; and if there were no bowel symptoms the opaque meal would not be repeated, nor would an opaque enema be given. Every effort was made, however, as a matter of routine, to see the descending colon and sigmoid when filled; and as the patient was staying in the same building as the X ray room

[1] Brit. Journ. Surg., 1917, iv., 468-530.
[2] Surg., Gyn. and Obst., 1918, xxvi., 211.
[3] Am. J. Obst., 1917, lxxv., 252.

this could usually be done. With good plates, when the little pouches were multiple and had reached the size of a small currant, they were easily seen. Diverticula in the early stages of their formation or diverticula which were few in number and were filled with fæces, or did not come into profile, might be missed; but if there were many of them, as there generally were, it was unlikely that none would fill with barium or show on the plate. As soon as they began to retain material longer than the bowel—that is to say, as soon as they were likely to be predisposed to inflammation—they were, if at all numerous, obvious; for the chain of opaque dots lying along the course of the empty bowel was characteristic. All of their cases showed retention of barium in the diverticula. Nine slides showing diverticula, from X ray photographs of six cases by Mr. Marxer, were then shown on the screen. Photographs were also exhibited on the walls. These six cases of unsuspected diverticula of the colon were all males, of ages varying from 53 to 71. One showed a single diverticulum on the plate; in the other five the diverticula were multiple and in three numerous. Two of them also showed one diverticulum in the terminal part of the ileum. In another there was a large single diverticulum, probably of a different nature, in the third part of the duodenum. The diverticula of the colon were thought to be simple extrusions of the bowel wall at weak places. It was to be noted that they occurred in those parts of the small and large intestine where the contraction of the muscle in the wall of the bowel might be supposed to be especially vigorous, with a corresponding increase of pressure in the lumen—namely, in the last few inches of the ileum and the latter part of the colon. One of the patients had suffered from severe constipation, four gave a history of moderate or intermittent constipation, and one had never been constipated. In four of the six there was no X ray evidence of delay in the bowel. In two there was such evidence, the opaque material not having passed through the colon in 72 hours. (The rate of passage of the buttermilk meal was quicker than that of some other opaque meals. With buttermilk 48–72 hours was regarded as a normal time.) In one case there was general hypertonus of the large bowel, and in one case hypertonus of the pelvic loop. The series was small, Dr. Spriggs said, but he brought it forward, firstly, to show how well diverticula could be recognised by the X rays; secondly, because it was an early series. Not one of these patients had any symptoms clearly attributable to the diverticula which were seen. He would, of course, in view of the risks they run, keep in touch with their medical advisers. In all the diverticulum-bearing area of the bowel was freely movable. The cases included two of chronic appendicitis (one of them with arterio-sclerosis), two of duodenal ulcer, one of gastric hypoacidity, and one of neurasthenia following a chronic infection. The last-mentioned patient had not been heard of recently. The other five recovered, and four of them were following active occupations.

Mr. W. MCADAM ECCLES showed a specimen of Part of a Pelvic Colon which had been divided longitudinally to show numerous diverticula and a marked narrowing of its lumen due to fibrous thickening of the wall. One diverticulum at its upper extremity, larger than the others, had a narrow neck and bulbous extremity, which appeared to pass into an appendix epiploica. Microscopically there was no evidence of malignancy, but an extreme degree of chronic inflammatory change. The diverticula were lined by normal mucous membrane. The specimen had been removed from a somewhat obese man, aged 74, who had been troubled for more than a year by chronic constipation and flatulence. The motions had never contained blood, but were always much flattened. A movable elongated tumour had been felt in the left iliac fossa and was regarded as carcinoma. The mass was excised and an end-to-end anastomosis was performed. No enlarged glands were found and recovery was complete. He thought that diverticula were congenital, that at birth there was a minute commencing protrusion. At the site of the diverticulum there was generally a circle of blood-vessels which ran up into the appendix epiploica, and therefore a possible hiatus. Diverticulitis occurred nearly always in men, not always in those subject to constipation. In many cases intestinal gas was present, the anal sphincter was active, and there was, in consequence, backward pressure, which was most felt in the pelvic colon. With regard to the differential diagnosis from cancer, it should be remembered that in diverticulitis hæmorrhage was very rare, whereas in carcinoma it was pretty constant.

Mr. G. GREY TURNER also took part in the discussion. His paper appears in full in the present issue of THE LANCET.

Mr. RUTHERFORD MORISON said that for centuries certain deformities of the blood-vessels and urinary bladder had been recognised and described as sacculi. Sacculated aneurysms, sacculi of the veins, and sacculated bladders had been, for all this time, acknowledged conditions, so that they had the hallmark of tradition. It was now known that all the hollow viscera might be similarly affected, but confusion had arisen because these protrusions had been described as diverticula. Sacculation of the colon had been described by anatomists as its normal condition, but this difficulty could be got over by regarding ordinary sacculation as normal, and acquired sacculation as pathological; this was easier when it was remembered that that part of the colon, the sigmoid loop, which was most generally affected by pathological sacculi, was at times almost devoid of the normal sacculation. The name was of great fundamental importance, because it involved a principle on which the progress of surgery depended. If each small part of the body was to be considered as the possessor of diseases peculiar and special to itself, then all real advance was impossible. The same pathology was applicable to all parts of the body, and in similarly constituted parts of it even the smaller details of disease were in essential qualifications alike. The signs of resistance of the tissues to their enemies (pathology) were relatively simple in their manifestations when compared with anatomical and physiological problems. Another reason for his objection to the term "diverticulitis" was that since Meckel's diverticulum was known the name had had a special significance. This anomaly was of congenital origin; all coats of the intestine entered into its composition; it had a special vascular supply of its own; it was single, and it was found at any age. These qualifications were common to all the ordinary intestinal diverticula, such as the vermiform appendix and those associated with pancreatic outgrowths. The sacculi were not of congenital origin but were acquired; their walls were thin and not composed of all the coats of the intestine; they had no special vascular supply; they were multiple, rounded in shape, and were almost limited to elderly people; they had been found in all of the hollow viscera and were of an importance not yet fully recognised. There was the same difference between a sacculus and a diverticulum as there was between an acquired and a congenital hernia. The only excuse for confounding them was that the pathology of both was the same. Both might harbour fæcal concretions or foreign bodies, and inflammation in them led to the same results—gangrene and perforation and general peritonitis, ulceration and sloughing with abscess formation, or inflammatory thickening and fibrosis, closely resembling a malignant growth of the bowel. The last condition was described, especially by American authors, as peri-diverticulitis; it was an important condition, but not special to the colon. It might be found in a portion of intestine reduced after strangulation; it had been found in the stomach (and called *linitis plastica*); it occurred in the skin (and was called keloid or pseudo-keloid); it occurred in the cæcum (and when due either to subacute sepsis or to tuberculosis was apt to be called hyperplastic tuberculosis). In all it was difficult to distinguish clinically and in some pathologically from cancer; in all it might be due to subacute sepsis, to tuberculosis, or to cancer.

Mr. HAMILTON DRUMMOND said that during a period of 18 months he had examined the intestines of all the bodies upon which post-mortem examination had been made in the Royal Victoria Infirmary, Newcastle-on-Tyne, about 500 in all, with a view of

investigating the ætiology of pathological sacculi of the large intestine. During this period he had met with 22 specimens showing a marked condition of pathological sacculi, and these were from the bodies of people who had died from causes unconnected with the intestinal lesion; in many cases the sacculi were found in the pelvic colon only. It was an interesting and somewhat remarkable fact that in five of the cases in which sacculi were found in the colon there were also sacculi in other hollow viscera; in four cases there were sacculi in the small intestine, the opening appearing between the leaves of the mesentery; and in one case there were multiple sacculi in the bladder wall. This tendency to diffuse sacculation would seem to have an important bearing upon the causation of sacculi of the colon, as it suggested a more or less general weakness (perhaps congenital) of the non-striated muscle tissue throughout the body. Stress had been laid upon venous congestion as a predisposing cause, but many of the bodies examined when searching for cases of sacculi were those of elderly people with chronic heart disease and marked back pressure, and in none of these were sacculi found, a fact which did not support the venous congestion theory. Intestinal obstruction was another cause put forward in attempting to explain the development of sacculi, but in only two out of the 22 cases referred to could obstruction be said to be a factor, and these were typical ring cancers with well-marked sacculi above the growth. An examination of the specimens procured during the investigation demonstrated that the sacculi almost invariably took their origin between the mesocolic and one of the lateral bands, and frequently opened into the appendices epiploicæ. They were rarely found in the leaves of the mesentery or on the antemesenteric aspect of the gut. The appearance of pathological sacculi at these definite points in the bowel wall might be accounted for by the anatomical distribution of the vessels, for numerous microscopical sections pointed to the great frequency with which these sacculi pushed their way along the course of vessels. This fact had been pointed out many years ago by Klebs and Graser.

Mr. HAMILTON DRUMMOND then showed some drawings of pathological sacculi of the colon, with special reference to the position at which the sacculi made their appearance through the bowel wall. Microphotographs were shown illustrating how sacculi followed in the line of the vessels and tended to push their way towards the mesentery of the bowel; other microphotographs showed typical examples of how pathological sacculi open into the appendices epiploicæ; also the marked atrophy of the bowel wall in the actual herniated portion of the gut. All drawings and microphotographs were obtained from post-mortem room specimens, death being due to some other cause than the intestinal lesion.

Mr. GARNETT WRIGHT reported a case which was an example of colico-vesical fistula due to diverticulitis.

Mr. R. P. ROWLANDS said that during the last ten years he had operated upon eight cases of diverticulitis of the colon and one of the duodenum. Three of these operations were for peritonitis, due to perforation of a diverticulum.[4] The remaining five were for intestinal obstruction, the first two of which have already been published in THE LANCET.[5]

**The first case was that of a very feeble, thin, anæmic lady of 60, who had suffered from constipation all her life. Mitral regurgitation was present, and there was almost complete intestinal obstruction, with œdema of the legs and ascites. Carcinoma of the sigmoid colon was suspected. The colon, from the splenic flexure almost to the rectum, was rigid, very thick and inflamed, and almost solid. She was too ill for resection. A short circuit was made with difficulty between the ileum and the lower part of the pelvic colon. For over a year she suffered from flatulent distension and looseness of the bowels, but secondary resection was declined. Gradually the diarrhœa ceased. Ten years later she was reported to have had no serious or acute affection of the bowels since the operation, though there was still flatulent distension and constipation.**

**In cases 2 and 3, men of 49 and 40, resection of 6 to 8 in. of the pelvic colon was performed for what appeared to be malignant disease. It was only after the operation in each case that an accurate diagnosis was made and the diverticula found after opening the bowel. Microscopic examination revealed the absence of carcinoma. In each case there was stenosis, with a definite tumour the size of a hen's egg. Both patients had rigors before the operation. They had remained in good health and had been able to work hard for nine years. In one case resection with immediate end-to-end union was adopted, and proved most satisfactory.**

**The fourth case was that of a lady of 60 who had had many attacks of pelvic peritonitis during 20 years. Appendicectomy had been performed elsewhere and a tumour then discovered in the pelvic colon. Three years ago several diverticula containing calculi were removed from the pelvic, iliac, and descending colon, and the tumour, localised to the anterior wall of the pelvic colon, was incised and found to contain two diverticula full of pus. These were excised and the bowel closed. The patient remained well for a year, but since then had had several milder attacks which had not been severe enough to call for further operation. The case illustrated the well-known difficulty of finding and removing all the diverticula, and pointed to cylindrical resection of the diseased segment of bowel as the operation of choice.**

**The fifth case was that of a man of 40, who had also suffered from many attacks of pelvic peritonitis supposed to be due to appendicitis. Four years before he was seen by Mr. Rowlands he had developed a colico-vesical fistula, and was told that he had inoperable cancer of the bowel. He was in a poor state of health and very depressed. The fistula was closed by laparotomy. It was between the middle of the pelvic colon and the left side of the bladder. The openings in the bladder and colon were closed and inverted. There were extensive adhesions in which were pockets of pus. The patient died a week later of pelvic peritonitis and pericarditis. No diverticula were found at the operation, but several were found from within the lumen of the bowel after death.**

In such a late and difficult case the speaker thought it would be wise to start with a preliminary colostomy. This would immediately relieve the very troublesome cystitis and sepsis and make the subsequent operation easier and safer. Mr. Rowlands urged: (1) The importance of keeping diverticulitis of the colon in mind when operating for stricture of the colon. (2) That early resection with end-to-end union was the operation of choice. (3) That temporary colostomy was indicated in late or complicated cases, especially when distension could not be overcome before operation or a colico-vesical fistula existed. (4) That in some late cases a short circuit might be made, with subsequent resection if necessary. Preferably the transverse colon should be joined to the pelvic colon. The transverse colon was generally healthy and low in these obstructive cases. The subsequent resection was thus made easier and more satisfactory. Failing the transverse colon, the ileum or cæcum might be joined to the pelvic colon. (5) When temporary colostomy was performed it appeared wise to make the opening only a little above the stricture, so that it could be removed with the stricture at the second operation and a third operation thus avoided.

The discussion was adjourned until Wednesday, Jan. 14th, at 5.30 P.M.

[4] The Operations of Surgery, vol. ii., p. 437.
[5] THE LANCET, 1910, vol. i., p. 1194.

## SECTION OF SURGERY: SUBSECTION OF ORTHOPÆDICS.

### EXHIBITION OF CASES.

A MEETING of this section of the Royal Society of Medicine was held on Jan. 6th, Mr. E. MUIRHEAD LITTLE, the President, being in the chair.

*Coxa Vara.*

Mr. R. C. ELMSLIE showed a case of coxa vara in a boy aged 9 months. There was a history of "cross-birth"; one leg was brought down (it was not known which), the left arm was fractured, the left leg was "black and blue." The child was brought to hospital in December on account of shortening of the left lower limb, which proved to be half an inch shorter than the right. The femur was bowed forwards and outwards in its upper part, and abduction of the limb was very limited. X ray examination showed that the femoral neck formed about a right angle with the shaft, and that the latter was convex externally immediately below the great trochanter. The epiphysis of the head

and the neck of the femur were normal. The pathological anatomy differed from that of the form of coxa vara usually seen in young children, but the appearance might explain certain rare cases of coxa vara with a right-angled neck. The treatment indicated was osteotomy of the femur through the great trochanter, and abduction of the lower fragment into line with the upper.

*Osteitis Deformans.*

Mr. E. LAMING EVANS showed three cases. The first was that of a woman aged 48, who came under his care at the Royal National Orthopædic Hospital in 1919. In 1910 she knocked her left leg against a form; a swelling formed, accompanied with slight aching pain. The swelling had got gradually larger since that date. In 1918 it suddenly increased in size, with exacerbation of pain. She was admitted into a general hospital in London. Wassermann's test proved negative on two occasions. After six weeks' observation and rest an exploratory incision was made into the tibia; since that date the pain had increased. There was now a uniform thickening of the upper two-thirds of the left tibia with a well-marked anterior curve; the left tibia was half an inch longer than the right. X ray examination showed a uniform absence of definition of cortical and cancellous bone in the upper third, together with obliteration of the medullary cavity. The middle third showed, in addition, a density suggesting cystic formation, with sequestra. For the last 15 months she had complained of pain in the back of the head and neck; the occipital region was tender, so that she avoided lying upon the back of the head. She thought the head had increased in size. The occipito-frontal circumference was 21 in. An X ray examination of the skull showed thickening of the occipital and parietal bones. He regarded this as a case of osteitis deformans, and thought it worth bringing to the notice of the section for the following reasons: (1) the definite traumatic origin; (2) the limitation, after nine years, to a single long bone; (3) the anterior curvature of the affected bone, whereas the usual curvature was antero-external; (4) the actual lengthening of the affected bone; (5) the interval of eight years from the commencement before involvement of any other region, and subsequent involvement of the occipito-parietal.

Mr. ELMSLIE agreed that the case was one of Paget's disease. He would accept all the phenomena as evidences of Paget's disease, but the appearance suggestive of a cavity with sequestrum raised a difficulty, as similar phenomena occurred in osteomyelitis. The skull changes, however, were sufficient to make the diagnosis certain.

*Fracture of Right Carpal Scaphoid Bone.*

Mr. Evans's second case was that of a man, aged 39, with fracture of the right carpal scaphoid bone. In 1917, whilst pushing down the handle of a motor, the engine back-fired, and, as the handle was not released, the patient received the thrust of the back-fire through the wrist-joint. He had only done a little light work since that date, and the disability would appear to be out of proportion to the physical signs. There were now slight swelling over the carpus, tenderness and pain over the scaphoid. The grip was fair except in certain positions of dorsal extension, when the hand became powerless. The power of dorsal extension was poor, and the extreme limits of movements in all directions were restricted. X ray examination showed a partially united fracture through the neck of the scaphoid, with arthritic changes between the scaphoid and os magnum. The cause of the fracture appeared to be of the nature of a crush between the down-thrust of the forearm and the up-thrust of the starting-handle. If at the time of the back-fire the handle was held with the hand deviated ulnawards, the head of the os magnum was directed towards the neck of the scaphoid, and, acting as a wedge upon its weakest point, produced a fracture in the region of the neck. If the hand was directed radialwards the head of the os magnum crushed upon the semilunar, and produced a subluxation or luxation.

Mr. C. MAX PAGE agreed that this injury was often in the nature of a crush fracture. He had recently had two cases in which the scaphoid had been broken as the result of a back-fire. He considered that when pain and disability persisted operative removal of the fragments was the proper course, and in his experience had given satisfactory results. After operation the wrist should be put up in a position of extension.

*Dupuytren's Contraction.*

Mr. Evans's third case was one of Dupuytren's Contraction affecting the ring finger of the right hand in a man aged 32. It appeared to be consecutive to a traumatic arthritis of the first interphalangeal joint, caused by the fall of the roof of a dug-out in 1915.

Mr. PAGE had observed the use of fibrolysin in a good number of cases both by local and by intramuscular injection. He had formed the opinion that the injection had no influence on existing scar tissue in these cases, and was of very doubtful value in the prevention of a recurrence of the deformity. He considered that after operation a return of the contracture could only be prevented by the wearing of an extension splint at night for a year or more.

---

PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on Jan. 2nd and 3rd at the University of Manchester, where the first meeting was held on July 14th, 1906. The chair was taken by Professor H. R. Dean, and the society was hospitably entertained by the Pathological Society of Manchester.—Sir Kenneth Goadby (London) discussed a large number of cultural and microscopical examinations he had made of old war wounds. Bacteria, he said, might remain latent for an extraordinary long time; they did not necessarily cause any local tissue reaction, and most of the sporing anaerobes occurred in the vegetative phase.—Dr. J. H. Dible (Manchester), from a study of about 150 strains of intestinal streptococci, showed how on the average various properties (heat resistance, fermentations, &c.) were associated [in such a way that it was possible to dissect up the very unsatisfactory group of the enterococcus and its allies along practically useful lines.—Dr. J. C. G. Ledingham showed that by inoculating rabbits with the excreta of lice infected with trench fever it was possible to obtain sera which would agglutinate emulsions of the Rickettsia.—Dr. A. H. Miller (Sheffield) demonstrated the nodular tubercle bacilli which he obtained by using a median containing sperm oil.—Professor Dean described a small epidemic of Flexner Y dysentery in the surgical wards of a children's hospital with several fatalities. One of the cases infected its own family and one living next door on its return home.—Professor A. E. Boycott dealt with some of the difficulties in making single-cell cultures with the degree of certainty necessary in investigating the transmutation of bacteria. He also detailed experiments on the killing of tadpoles by heat, and contrasted the results with those of similar trials with bacteria.—Dr. J. Holker (Manchester) exhibited a very convenient apparatus for measuring the opacity of liquids, and gave an account of a philosophical study of what happens when antigen serum and salt solution are mixed in the Wassermann reaction.—Dr. J. Cruickshank (Dumfries) described his experience with the gold sol test of the cerebro-spinal fluid; he had found it of great value in the diagnosis of general paralysis. He also detailed a number of curious observations showing that solutions of lecithin in ether, &c., had a special capacity for extracting dyes and some inorganic salts from watery solutions which was not shared by lipoids in general.—Dr. A. G. Gibson (Oxford) found that a positive Wassermann reaction might appear at very variable times after a provocative dose in persons who were suspected of being cured.—In an original communication Dr. C. Powell White (Manchester) discussed the application of statistical methods of correlation to the interpretation of urine analysis, and made out a good case for the utility of the method in discovering the actual combinations of acids and bases secreted by the kidney.—Professor E. Emrys-Roberts (Cardiff) detailed a number of cases of infected wounds in which very good results had followed the exhibition of normal horse serum subcutaneously.—Professor Dean exhibited a case of cancer, probably of a bronchus, with a large number of cystic metastases.—Dr. Clara Stewart (Leeds) and Dr. A. Leitch (London) both dealt with the migration or metastasis of adenomyomatous uterine tumours; and Dr. W. E. Hume and Dr. A. F. B. Shaw (Newcastle) gave a full account of a fatal case of splenomegalic polycythæmia, in which opportunities for post-mortem examination seldom occur.—Professor M. J. Stewart (Leeds) put in a plea for the more extended use of the polarising microscope in pathological histology, and showed how useful it may be for finding sutures and ligatures in tissues.—There were a large number of interesting exhibits.

# Reviews and Notices of Books.

## WAR DISEASES AND PENSIONS.

By R. M. WILSON, M.B., Ch.B., Temporary Captain, R.A.M.C.; and W. M. T. WILSON, M.B., Ch.B., late Temporary Captain, R.A.M.C. With a chapter on the Diagnosis of Malaria by Major ERNEST BLACK. London: Oxford University Press. 1919. Pp. 71. 3*s*. 6*d*.

THIS small manual is an attempt to guide the footsteps of pensions boards along right channels, and with this object in view is didactic in style and expression. Its main purpose is to combat the snare of symptomatic diagnosis, especially that of "D.A.H.," a term which is still, we fear, loosely applied without any sufficient attempt to discover the basis of the symptom. The pensioner is in consequence incorrectly labelled as a "heart case" and becomes a perpetual worry to the examining officer as well as to himself. At one board he may complain chiefly of his heart, at another of his aching limbs, at a third of his indigestion or headache, and so on. The authors of the manual believe that at least half a million such misfits in diagnosis are going about the country.

Having given a concise description of the nature of "D.A.H.," the writers go on to suggest the relation between various toxic states and this condition, showing how the symptoms vary: (*a*) with the degree of infection and (*b*) with the amount of effort or excitement called for. Tremors and hyperidrosis are, they find, strongly suggestive of trench fever, and the usual symptoms of neurasthenia, commonly laid to the charge of "shell-shock" alone, are here ascribed to an initial toxic origin. The authors' dogmatism on this point will doubtless bring into the field those who hold a contrary view, who may begin by throwing a doubt on whether trench fever is really as common in this country as the authors suggest. There can be no question, however, that cases of chronic trench fever are often carelessly diagnosed as tuberculosis; this is an everyday experience of pensions boards.

The frequency of a systolic apical murmur and a displacement of the apex beat outwards to the nipple line in "D.A.H." cases are cited, and attention is drawn to the researches at Mount Vernon Hospital, which showed that there is no true dilatation in these cases. The differential diagnosis of auricular fibrillation and extra-systoles by means of the exercise test is described, but the authors are inclined to discount the value of this test as a means of estimating the poisoning of the cardiac nervous system, and prefer to substitute the effect of a long and deep inspiration. Their conclusion is noteworthy:—"No man should be pensioned for D.A.H. Pensions should be awarded for malaria, trench fever, dysentery, and so on—that is to say, for the fundamental infections which cause D.A.H."

The clinical features of trench fever, malaria, and dysentery are concisely recorded, and a valuable chapter by Major Black is devoted to the treatment of malaria. In most cases of malaria severe dyspnœa on exertion is not a common feature, and the presence of an added dysenteric infection should be excluded by the examination of the stools for the *Entamœba histolytica*. A few useful hints on the assessment of the degree of disability are added.

The authors of this volume are to be congratulated on the production of a timely and helpful book, which will afford aid to those engaged on pensions boards and to the general practitioner who is called upon to deal with the soldier invalided on account of one or other of the diseases of war.

## A HANDBOOK OF GYNÆCOLOGY.

By BETHEL SOLOMONS, B.A., M.D. Dub., F.R.C.P. Irel., Gynæcologist, Mercer's Hospital, Dublin, &c. London: Baillière, Tindall, and Cox. 1919. Pp. 12 + 236. 10*s*. 6*d*.

THIS little book consists mainly of notes of the author's lectures. He has written it because he believes that the student requires a small book to help him in his practical work. The book contains a good deal of useful information, but we do not think that the author has been happy in the selection of his material. It seems a pity when so little is known about menstruation to mention the latest theory, for which it is admitted there is not much experimental proof, and to leave out others, many of which are much more probable. Dr. Solomons calls attention to the fact that the nomenclature of certain tumours of the tube is very unsatisfactory. If this is so, then surely in a book of this scope it would have been wiser to omit the list of such tumours, which is given without a word of explanation. The recommendation to give every woman a vaginal douche before a pelvic examination cannot be intended for ordinary practice; it is unnecessary and, indeed, is impracticable in the majority of cases in private practice. The fact that the membrane in cases of imperforate vagina is not the hymen is not called attention to. Cysts of Gärtner's (sic) ducts are said to be single, when not infrequently cysts of Gartner's ducts are multiple. The recommendation to remove a fibroid polypus with a pair of clip forceps in the majority of cases would be quite impracticable; nor can we agree that in the removal of a large tumour of this kind the cervix should be slit up; why cut the patient when it is quite easy to cut the tumour? The author exaggerates, in our opinion, the danger of using a repositor in treating cases of inversion; when used properly, this instrument has been proved in considerable numbers of cases not to be at all dangerous.

## NEOPLASTIC DISEASES.

A Text-book on Tumours. By JAMES EWING, A.M., M.D., Sc.D., Professor of Pathology at Cornell University Medical College, New York City. London and Philadelphia: W. B. Saunders Company. 1919. Pp. 1027. £2 2*s*.

IT is usually taught that neoplasms may be classified according to their morphological and biological characters, with little or no reference to the organs or parts of the body in which they grow. All carcinomata are regarded as fundamentally identical, whether they occur in the tongue, the rectum, or the breast; and the solution of the "cancer problem" as a whole is sought for rather than the ætiology of any particular form of tumour. Professor Ewing, however, believes that new growths are susceptible of a much finer analysis, and in this excellent work his aim has been to analyse and differentiate the various types of neoplasms, to enumerate and contrast the more striking clinical features characteristic of different tumours, and to consider the ætiology of individuals rather than the type.

The book is divided into two main parts, the first of which treats of general oncology, and includes a good historical survey, and chapters on general pathology, malignancy, metastasis, the chemistry of tumours, ætiology, and experimental research. The second part, which is by far the larger, deals with special oncology. Here, while the simpler connective-tissue tumours are considered separately, and there are special chapters on endotheliomata, sarcomata, and carcinomata, the author, true to his conception of malignant disease, takes the various organs in turn, and discusses in detail the neoplasms which may be found in them. The final chapter, on Teratology, gives a résumé of this branch of the subject, and, though brief, is adequate, since the commoner teratomata are described elsewhere according to the organs in which they occur. There is a very complete bibliography, the references being conveniently grouped according to chapters at the end of the book, with page numbers in heavy type; and the index leaves nothing to be desired.

There are 479 illustrations, nearly all from photographs. The majority of these are successful, but the details of some of the microscopical preparations would have been more satisfactorily shown by drawings. Some of the figures are, we think, likely to confuse the student. It is surely unfortunate that the first illustration in the chapter on Fibroma should be of a benign pigmented fibro-epithelial wart which bears no resemblance at all to a fibroma; and the student who has been taught to consider Paget's disease of the breast as a chronic inflammation of the nipple

associated with a mammary cancer may well rub his eyes to find this condition illustrated by lesions of the skin of the buttock. It is, however, impossible to provide at one and the same time for the beginner and the expert, and though the former may not appreciate, the latter will be grateful for many of the rare and interesting conditions which are figured.

Professor Ewing has produced a book which will, we think, be recognised as the standard work of reference on this subject in the English language for many years to come. His knowledge of the literature is immense, and he has drawn upon it freely, so that, although the book is based on his own experience, practically every page contains references to the work of others. It is remarkable that such a stamp of individuality should have been retained in so broad and catholic a survey of the subject. The author holds definite views on many disputed points, and, though some may differ from them, all will acknowledge the fairness with which they are presented. The chapter on Endotheliomata illustrates this as well as any other. The history and present position of the controversy which has ranged over these difficult tumours are admirably set forth; and though Professor Ewing acknowledges himself a believer in the endothelial origin of a wide variety of tumours, he makes no attempt to belittle the difficulties of proving it. He holds that it is possible to recognise the neoplastic endothelial cell, but on p. 300 this cell is described as possessing "a small, pale, vesicular nucleus with minute multiple nucleoli," while on p. 302 it is said to have a "pale nucleus devoid of nucleoli."

The importance of chronic irritation in the ætiology of malignant disease is now universally recognised, and Professor Ewing rightly lays great stress on it. We should be inclined to join issue with him, however, on the question whether a single trauma, as distinct from long-continued irritation, can initiate the malignant process, and we think his views as to the occurrence of a definite "pre-cancerous stage" will be exposed to an even more critical examination. So far as we know, there are no histological tests by which we can recognise the actual development of malignant properties in an epithelial cell, and the early stages in the formation of a sarcoma are, if possible, even more obscure. The pathologist may find it difficult enough to determine from a section whether he is dealing with a malignant process or not; if, in addition, he has to cultivate the gift of prophecy his task will become an impossibility or be reduced to a mere pious expression of opinion.

Such a book as this will prove invaluable to the advanced worker, but its very merits render it less useful to the student. The philosophic outlook and lack of dogmatism are, we regret to think, properties which will militate against its success as a mere text-book; but we have no doubt that it will achieve a much higher position in medical literature, and we cordially congratulate Professor Ewing on the success which has attended his labours.

## LA RACHIANESTHÉSIE GÉNÉRALE.

By Professor THOMAS JONNESCO. Paris: Masson et Cie. 1919. Pp. 182. 4 francs.

Professor Jonnesco has condensed in the present small volume his experiences of 11 years of work on spinal anæsthesia. He was engaged upon a big work when the war separated him from his manuscript, his statistics, and his papers generally, the fate of all of which in Bucharest is still doubtful. Professor Jonnesco is, of course, a whole-hearted advocate of spinal anæsthesia, believing it to be the best available method for procuring anæsthesia during operation on any part of the body. His method consists in the injection of stovaine and strychnine into the subarachnoid space at one or more of four different sites according to the seat of operation. These sites he calls the medio-cervical, the upper dorsal, dorso-lumbar, and lumbar, and their position is sufficiently indicated by their names. The dosage is varied according to the height in the spinal column at which the injection is made and according to the condition of the patient. Failure to observe these conditions with sufficient care accounts, according to the author, for such failures or fatalities as have occurred.

The high punctures have been made on more than 1000 occasions by the author and colleagues and pupils in Roumania. In his own practice there has been no fatality. The alterations in respiration which occur after high punctures are important and are described in detail; they differ according to whether, before injection, the patient is breathing by abdomen or thorax alone, or by both. The paralysis of breathing that occurs is due to effects on the cervical nerve-roots and not on the bulbar centres, and is of so short a duration that, treated by artificial respiration, it leads to no harm. The anæsthesia produced is a true analgesia—an obliteration of all pain sensations, but not of those of touch and of heat and cold. The author writes with enthusiasm, and his results, as stated, bear out his claims, but when he draws a comparison between inhalation anæsthesia and his own method it is obvious that the best results of the former method have not been at his disposal to compare with the best performance of the latter.

## A COMPLETE SYSTEM OF NURSING.

By A. MILLICENT ASHDOWN, Examiner in Nurses' Practical Work to Guy's Hospital. London: J. M. Dent and Sons, Ltd. 1919. Pp. 746. 12*s.* 6*d.*

THIS comprehensive text-book was originally the work of Miss Honnor Morton, but it was entirely rewritten and illustrations added by Miss Ashdown in 1917. The latter has made it her object to produce a book which deals with every branch of her profession without going into such detail as would have made the volume unwieldy. A short account of the nature and treatment of a large number of diseases is given, though the author is emphatic in stating that it is not her intention to encourage nurses to act on their own responsibility "except under circumstances of extreme urgency." The text is well illustrated, for the most part with original pictures, which demonstrate methods of bandaging and bed-making, instruments and their application, and various typical temperature charts. The text has been carefully compiled and has a good index. Among the additions made in the revised 1919 edition is an account of the treatment of burns with wax.

The volume is brought thoroughly up to date, and will be widely read, not only by practising nurses and probationers, but also by health visitors and those numerous V.A.D.'s who are anxious to make use of their war experience in wider fields of service.

## JOURNALS.

*Parasitology.* Edited by GEORGE H. F. NUTTALL, F.R.S., assisted by EDWARD HINDLE, M.A., Ph.D. Vol. XI., Nos. 3 and 4, October, 1919. Cambridge University Press. Price 25*s.* net, yearly subs. £1 15*s.*—Intestinal Protozoa Found During Acute Intestinal Conditions amongst Members of the Egyptian Expeditionary Force, 1916–1917, by F. W. O'Connor, comprises observations made by the author when employed as protozoologist to the field laboratories during the latter part of 1916 and 1917. A record is given of the various species of protozoa found in the stools of both white and Indian troops and members of the Egyptian Labour Corps suffering from dysenteric or diarrhœal conditions, and also of the parasites found in the stools of Egyptians not complaining of illness. *Entamœba coli* was the most prevalent, followed by *E. histolytica* and *E. nana*. Among flagellates *Lamblia intestinalis*, *Chilomastix mesnili*, *Trichomonas hominis*, and *Tricercomonas* are recorded, and of especial interest are nine cases of *Isospora hominis*. Two very heavy infections of this coccidium were observed, and attempts were made to infect puppies but without success. — The Genus *Lernæopoda*, including a Description of *L. mustelicola* n.sp., Remarks on *L. galei*, and Further Observations on *L. scyllicola*, by W. Harold Leigh-Sharpe, is an account of the four commonest species of *Lernæopoda* occurring parasitic on the fishes of British waters.—A Practical Hot-air Disinfector, by Harold Orr, contains a description, together with diagrams, of a very simple form of hot-air chamber which has been used on a large scale for disinfecting the clothing

of troops. As the louse and the nit are both destroyed by ten minutes' exposure to a dry heat of 55° C., it is obvious that this method of killing them is preferable to the use of sulphur dioxide or steam. For practical purposes the material for disinfestation was exposed to a temperature of 75° C. for 20 minutes, and the chamber described affords a ready means of obtaining these conditions in the field.—Hermaphroditism and other Abnormalities in *Pediculus humanus*, by D. Keilin and G. H. F. Nuttall, contains an extremely interesting account of the results of crossing the human body-louse with the head-louse. Under certain conditions these crosses result in the production of a large number of hermaphrodites in the offspring, and the present article comprises a description, together with numerous illustrations, of a very large number of these forms. Results of experiments are also given in support of the specific identity of "*P. capitis*" and "*P. corporis*." Apart from the fact that they are mutually fertile, when *capitis* are bred in pill-boxes on the body they gradually acquire all the morphological characters of *corporis*. *Capitis* and *corporis*, therefore, constitute merely two races of one species, *Pediculus humanus*.—The Systematic Position, Synonymy, and Iconography of *Pediculus humanus* and *Phthirius pubis*, by G. H. F. Nuttall, also includes a useful chapter on the systematic position of the *Anoplura* and definitions of its suborders.—Further Observations on the Habits and Parasites of Common Flies, by G. S. Graham-Smith, contains many useful additions to our knowledge of flies and their parasites. The first part of the paper is devoted to an account of the influence of weather on flies, from which it appears that the curve recording the number of flies caught corresponds with the curve for the maximum temperature recorded in the sun. The appearance of flies early in the season does not necessarily indicate a great abundance in the latter part of the season. The cleansing habits of flies are illustrated by a series of excellent photographs of *Sarcophaga carnaria*. Empusa disease is found to infect species other than house-flies, in captivity *S. carnaria* being especially susceptible. In addition, specimens of *C. erythrocephala*, *L. cæsar*, *H. dentipes*, *F. canicularis*, *A. radicum*, *M. corvina*, and *S. stercoraria* have been found suffering from the disease. Certain Gamasid mites destroy both fly eggs and young larvæ, whilst various beetles destroy large numbers of puparia, but the most important enemies are the *Hymenoptera parasitica*. Examples of the five most important families—namely, the Cynipidæ, Proctotrypidæ, Ichneumonidæ, Chalcididæ, and Braconidæ—are described and figured. Further, very interesting experiments and observations are included on the life-cycle of *Melittobia acasta* and of *Alysia manducator*.—On the Life-History of *Ascaris lumbricoides*, L., by F. H. Stewart, constitutes the fourth part of the author's observations on this parasite. The present article is an account of three experiments with *Ascaris suilla* and a description of the larvæ that were obtained by feeding the "ripe" eggs to sucking-pigs.—The Incubation Period of the Eggs of *Hæmatopinus asini*, by A. Bacot and L. Linzell, comprises an account of experiments on the length of time taken to hatch the eggs of the common horse-louse. The results show that eggs may hatch up to 34 days after being laid, but the majority hatch after about 18 days.—Observations on the Biology of the Ixodidæ, by G. H. F. Nuttall, deals with the behaviour of the sexes in *Amblyomma hebræum*, *Hyalomma ægyptium*, and *Rhipicephalus bursa* when upon the host. The behaviour differs in these three ticks, for in the case of the first-named species the females seek the males, whilst in the other two the males seek the females.—On Two New Species of the Cestode Genus *Oochoristica* from Lizards, by H. A. Baylis, contains a description of two new species of tapeworms, and a comparison of the two genera *Oochoristica* and *Linstowia*.—Tsetse Flies and Trypanosomiasis, by H. Lyndurst Duke, is a most important article on "some questions suggested by the later history of the sleeping sickness epidemic in Uganda Protectorate." The writer, who has had many years' experience of sleeping sickness in Uganda, supports the hypothesis that there are two types of human trypanosomiasis in that region—one chronic, still widespread throughout the wild game, the other invariably fatal. The latter strain is supposed to be transmitted only by mechanical means, such as when the same fly bites two or more persons with very short intervals between. In the present place it is not possible to do full justice to the author's views, but the main issue of the article is to call attention to the question raised by the outcome of the preventive measure with a view to determining future policy. The obvious interpretation seems to be that reconstructive efforts might be begun in Uganda, on the assumption that an epidemic of sleeping sickness is impossible unless there is a sufficiently broad contact between fly and population to render possible the development of a virulent *mechanically transmitted* strain.—On the Life-History and Larval Anatomy of *Melinda cognata*, Meigen (*Diptera calliphorinæ*), Parasitic in the Snail *Helicella* (*Heliomanes*) *virgata*, Da Costa, with an Account of the other Diptera Living upon Molluscs, by D. Keilin, consists of two parts. In the first is given a complete account of the life-history and early stages of a common species of fly which the author found at Cambridge living as parasites on a common snail, whilst the second part is a review of all observations made hitherto on the life-history of different flies feeding upon living or dead molluscs. With regard to *Melinda cognata*, the female lays two or three eggs in the mantle cavity of each snail. The larva that emerges from the egg bores into the kidney and gradually destroys the renal epithelium, while later it devours the kidney and liver, thus killing the snail, and the final stage of development is completed in the decomposing liquid mass formed in the shell by the putrefying remains of its host. Finally, the larva pupates in the earth, the adult emerging about a fortnight later. A large number of species of flies have been recorded from molluscs, but in practically every case the observations are so incomplete as to be of little value. In an appendix the author mentions an interesting observation by M. E. Séguy, showing that the larvæ of *Musca domestica* will attack snails and complete their development as parasites. From 50 snails collected in the middle of January at Rambouillet nine yielded larvæ of the house-fly.—The Anatomy of the Head and Mouth Parts of *Psylla mali*, the Apple Sucker, with Some Remarks on the Function of the Labium, by A. J. Grove, in addition to providing anatomical details of an important agricultural parasite, contains some observations on the method by which the operations of piercing and sucking are performed in the Hemiptera.

*The Journal of Pathology and Bacteriology* was founded by Sir G. Sims Woodhead in 1893 and for 27 years has been the only British periodical entirely devoted to pathology. The first 11 volumes were published in Edinburgh and had already done much to encourage the study of pathology in this country when the Pathological Society of Great Britain and Ireland was founded in 1906. It was felt by the promoters of the society that an association with some periodical was most desirable, but there were obvious objections to a young society burdening itself with the responsibility of a substantial journal whose financial position was not completely secure. Ultimately in 1907 the journal was purchased from Professor Woodhead and Mr. Pentland by a company of 13 proprietors, members of the Pathological Society, who have been responsible for its conduct till the present year, and at the same time the society adopted the journal as its official organ. Under the skilful guidance of Professor Woodhead and Professor James Ritchie 11 more volumes have been issued and the progress of the paper has been so satisfactory that at the last meeting of the Pathological Society the proprietors were able to pay off the original purchase money and hand over the journal to the society with an adequate working balance. The *Journal of Pathology and Bacteriology* thus becomes the property of the Pathological Society of Great Britain and Ireland, and its founder may well be congratulated on the success of his public-spirited efforts, continued now for nearly 30 years, to promote the progress of pathology.

THE LANCET.

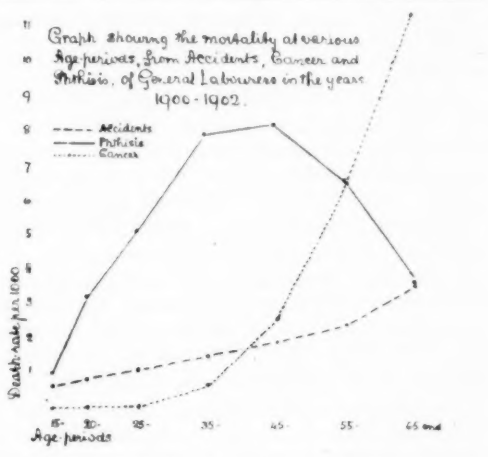
*LONDON: SATURDAY, JANUARY 17, 1920.*

## The Epidemiology of Accidents.

THE efforts which are being made through an organised "safety-first" campaign in this country, and through the activities of the National Safety Council in America, to reduce the prevalence of accidents deserve every support. There can be no doubt as to the value of the work; in the annual report of the Chief Inspector of Factories for 1918 the claim is made that the establishment of accident committees in factories may reduce industrial accidents by 50 per cent.; and in the United States of America, in a two weeks' "drive" in October, 1918, on the railroads of the North-Western region, there was a casualty reduction of 67 per cent., while 42 out of the 63 railroads concerned came through the two weeks without a single serious accident. There is, however, a tendency to concentrate effort on reducing accident risk without pausing to consider whether other influences may not also be concerned in accident causation; yet a careful study of cause should always precede action, for where the cause is not known the effect cannot be deduced. Two elements contribute to the occurrence of nearly every accident: (1) the risk of injury, and (2) the individuality of the person injured. A motor-car travelling along a street represents risk of injury to a foot passenger; but it is the temporary folly of the foot passenger which causes him to step off the kerb in front of the car.

Statistics of industrial accidents throw considerable light on the importance of this second element in accident causation; and their investigation suggests that accident prevention, an important branch of the science of preventive surgery, is closely akin to preventive medicine. The idea that an accident is, as the word suggests, a chance occurrence, is found to be no more true than for an attack of typhoid, influenza, or tuberculosis. Each industry has its own accident-rate associated with the risk of that form of employment; but this rate is not a chance one; it is as regular from year to year as the occurrence of tuberculosis or cancer, and steadily rises with advancing age; it is, in fact, a statistical entity obeying epidemiological laws. The diagram, which we reproduce below, is a typical one for industrial groups. Not only is the total number of accidents thus regular, but the numbers due to special types of risk (e.g., machinery in motion, falling bodies, persons falling) and affecting special parts of the body (e.g., loss of whole or part of arm or leg) are similarly regular year by year. Accidents appear to be dependent on the personality of the persons injured and to represent reaction to environment. Influences which affect health also affect the incidence of accidents; thus, hours of work, illumination, temperature, and ventilation affect activity and fatigue; they have also been shown by VERNON[1] to influence the prevalence of accidents. Nor does the likeness between the occurrence of accidents and illness stop here; for, according to GREENWOOD,[2] some persons have a tendency to sustain accidents, just as in the field of medicine some persons have a predisposition to succumb to tuberculosis or other infectious disease. Apart from any innate predisposition, there are times when any person is more liable to accidents than at others; just as most people are aware of attacks of losing things, and when one thing is lost expect to lose two more before the attack is over.

Temporary or permanent individual reaction to environment appears to be as important an influence in the causation of accidents as in the occurrence of disease; and the safety-first campaign must direct its attention to this question if it is to meet with the success it desires. BELLHOUSE, after stating[3] that in factories in 1918 twice as many non-machinery accidents—i.e., accidents due directly and obviously to human mistakes—occurred as machinery accidents, considers that not less than 65 per cent. of the latter may be attributed largely to such causes as negligence, carelessness, want of thought, and, perhaps more than all, to lack of proper appreciation of danger. The maintenance of safety, like the maintenance of health, consists of a rope with health at the one end and risk at the other. A person in sound health will resist either the risk of normal microbic invasion, or, aided by quick special sense reaction, risk of accident occurrence. Lower the health resistance and the pull of risk will win the tug of war. Similarly, of course, increasing the risk, as by mass infection or increased




[1] An Investigation of the Factors Concerned in the Causation of Industrial Accidents. H. M. Vernon, Health of Munition Workers' Committee. Memo. 21. 1918. (Cd. 9046.)

[2] The Incidence of Industrial Accidents upon Individuals, with Special Reference to Multiple Accidents. M. Greenwood and H. M. Woods. Report No. 4. Industrial Fatigue Research Board. 1919.

[3] Annual Report of Chief Inspector of Factories for 1918.

potency on the one hand, or by an earthquake or explosion on the other, will produce the same effect; but increase of risk is abnormal compared with lowered health resistance. Just as education in personal health is to-day the best means for improving national health, so, in a "safety-first" campaign, the aid of the individual and his education as to the existence of risk, with the way to avoid it, are the matters of primary importance to be considered. In matters neither of sickness nor of accidents can all element of risk be removed; but by improving health and alertness, rather than by fencing the public with protective guards, the influence of risk can be resisted.

## Lessons from the Flexner Bacillus.

IT is now universally agreed that the microbes which cause bacillary dysentery are *B. dysenteriæ* Shiga and *B. dysenteriæ* Flexner. These organisms form a natural genus having the following characteristics: "They are short rods, destitute of flagella and non-motile, forming no spores, not liquefying gelatin, negative to Gram's stain, and fermenting glucose and sometimes other sugars and alcohols without formation of gas."[1] The bacteriological diagnosis of the organisms depends chiefly upon their biochemical and serological reactions. Shiga's bacillus reacts with a smooth regularity to well-defined tests and its identification therefore presents no great difficulty. It is distinguished from Flexner's bacillus by its inability to ferment mannite, by its constant failure to produce indol in peptone water, and by sharp differences in its agglutinating properties. It also differs from the Flexner organisms in its high toxicity to man and animals. For these reasons most workers now regard Shiga's bacillus as a distinct and separate species, of which we have, so far, only one serological type. The Flexner bacillus presents greater difficulties. By means of its variable sugar reactions and its agglutinogenic powers it can be separated into several distinct strains.

The classification of the Flexner bacilli, which has up to now formed the usual working basis for bacteriological laboratories, and which is found in current text-books, is that put forward by HISS in 1904. This observer proposed to separate the organisms proved to have a causal relationship to bacillary dysentery, and differing from Shiga's bacillus in fermenting mannite, into three groups—the Flexner, the Y, and the Strong. The first differs from the second in fermenting maltose; the organism found by Major R. P. STRONG, U.S.M.C., ferments saccharose as well as maltose. Each group is further distinguishable by agglutination reactions. This classification is now known to be imperfect. In the first place the sugar reactions of these bacilli are very variable, and are therefore unreliable as a basis of classification; in the second the antigenic structure, and consequently the agglutinations, of the organisms are much more complex than is indicated in HISS'S terminology. KRUSE, who has contributed so largely to our knowledge of this subject, published in 1907 a more complete classification of the mannite-fermenting dysentery bacilli, in which he divided the group into half a dozen serologically distinct races. These were labelled A, B, C, &c. His work was confirmed by other bacteriologists in Germany, but, unfortunately, when the European war broke out, there was no collection of KRUSE'S strains in this country. The diagnostic work in dysentery in the war suffered as a consequence owing to the small range of agglutinable emulsions and agglutinating sera provided. Professor F. W. ANDREWES and Dr. A. C. INMAN have now published a study of the dysentery bacillus in which they show how five strains have been delimited by serological methods. They have put the absorption of agglutinin technique on a quantitative basis and have used it to indicate the antigenic composition of the different races, which is represented by ingenious coloured diagrams. The provision of agglutinating serums corresponding to these organisms will make bacteriological diagnosis of dysentery much more satisfactory.

A note on the general utility, apart from diagnostic purposes, of the separation of an organism into strains by means of agglutinins may not be inappropriate. From the point of view of infection and immunity the work of Dr. W. J. TULLOCH on *B. tetani* and of Miss M. ROBERTSON on *Vibrion septique* has a direct bearing on the subject. These workers have shown that the anaerobic bacilli mentioned may each be separated into several serologically independent strains. Each organism excretes a soluble toxin to which a corresponding antiserum can be prepared. Now, a monovalent serum—that is, a serum prepared by immunising an animal against the toxin of a single race of one of these bacilli—is able to neutralise the toxin of each and every race. There is thus no advantage in using either a monovalent or polyvalent serum. It follows that, although the bacillary protoplasm of *Vibrion septique* may possess variable antigenic properties, the toxins produced by all the strains are identical. In tetanus and gas gangrene the pathological changes are produced by toxins. The agglutinogenic powers of the organisms do not, therefore, appear to be of great practical importance.

[1] A Study of the Serological Races of the Flexner Group of Dysentery Bacilli. By Professor F. W. Andrewes, F.R.S., and Dr. A. C. Inman. Medical Research Committee Special Report Series No. 42.

## Infectious Disease and the Public View.

THE daily press appears to have become hypersensitive towards the incursions of infectious disease. So far as this represents a balanced endeavour to stimulate measures for the control of preventable infectious disease, and to educate the community in the need for such prevention, the public and the medical profession have reason to be sincerely thankful. But more than

occasionally the doctor feels that the criticisms of his endeavours, which the lay reader is offered, are the outcome of an imperfect acquaintance with things as they happen. During the past few weeks there has been a rise in the prevalence of scarlet fever and of diphtheria throughout the country, a rise which has been brought into particular prominence in London, where the situation has been aggravated by the failure of the War Office to restore to the Metropolitan Asylums Board certain fever hospitals lent for war purposes. For this the Ministry of Health has been taken to task, and a statement has been demanded from it as to its activities in searching out the origin of the epidemic, and as to whether it has traced the infection to any carriers or to a milk-supply. Certainly there is a substratum of value underlying this stricture, in that it is the duty of public health authorities, and in a more general sense of the Ministry of Health, to search for the origins of outbreaks of infectious disease. But the particular comment is ill-directed. In view of the multitude of carriers of diphtheria and scarlet fever constantly in London streets, and the universality of the rise in the prevalence of these diseases in the various districts, it is futile to talk of tracing the origin of this wave of disease back to particular carriers. A few moments spent in comparing the type of incidence of a milk-borne epidemic with that of the present outbreak of scarlet fever in London, would show at once not merely the unlikelihood of milk being its source, but also, it is to be hoped, the unwisdom of causing unnecessary perturbation to many a parent.

We set this out merely as an illustration of the attitude towards these subjects in some quarters. What is the reason for the attitude revealed? The fact, we imagine, is that while engaged very properly in educating the general public to take an intelligent interest in its communal health, the average editor is himself undergoing education as a layman in the science of preventive medicine. That education seems at present in some instances to be passing, as regards preventive medicine, through the "bottle-of-medicine" stage which typified much of the therapy of the past: if the community is being plagued by infectious disease, then give it for each such outbreak an appropriate bottle of medicine, labelled "carrier traced" or "milk-supply infected," or what not. This is not the progressive spirit which the public has a right to expect in the advice which it receives. It is necessary to appreciate the fact that there is much in the incidence of infectious disease still unexplored, and incapable at present of control. The statement published by the Ministry of Health on Dec. 19th last with reference to the London outbreak of scarlet fever is the kind of counsel that is really useful. In that statement it is pointed out that the present prevalence of scarlet fever is probably connected with the cyclic recurrence of the disease, and that: "The periodic or quasi-periodic appearance of epidemics is probably due to the occurrence of a cycle in the life-history of the unknown causative organism, and the increase of the non-immune population—causes which are beyond the sphere of administrative control." It does not follow that they will always continue to be beyond administrative control. Every effort should be made steadily to shed light on obscure points in the natural history of infectious diseases, and the encouragement of steady search for knowledge is welcome from whatever source, and immeasurably welcome when it comes from influential quarters. But an irrational demand for the immediate cessation of a particular outbreak, coupled with the implicit demand for somebody's head on a charger if the feat is not accomplished, serves no one.

The medical correspondents of lay papers have a grave responsibility in advising their chiefs as to the facts of infectious disease, as to the possibilities of prevention and of control, and as to the exercise of a proper sense of perspective. And their advice should be free from any political bias, as free as the epidemic wave which rolls towards all electors alike, regardless of the political creed of any CANUTE.

## The Privacy of Venereal Clinics.

A DIVORCE suit, heard this week before Mr. Justice MCCARDIE, which ended in a decree nisi against the defending husband, has brought to public notice in a particular manner the position of the medical witness. Against the defendant, who made no defence, adultery was proved, the act of cruelty being the communication of syphilis to his wife. To prove this Dr. S. KADINSKY, under whose care at the venereal clinic of the Westminster Hospital the petitioner had been, was called under subpœna. Dr. KADINSKY demurred at being sworn, and handed to the judge a letter from Mr. W. G. SPENCER, chairman of the Venereal Diseases Committee appointed by the House Committee of the hospital, stating that in adopting the national scheme for dealing with venereal diseases the House Committee proposed to abide by the statutory regulations enjoining absolute secrecy on the medical man in regard to patients attending venereal clinics. Mr. Justice MCCARDIE, however, ruled that higher considerations than those which prevailed in regard to the medical profession made it necessary for Dr. KADINSKY to give evidence, when it was elicited that the petitioner was only known at the hospital clinic by a number, but that the witness could identify her personally. No further questions were asked, and the case terminated as stated.

The case is of great importance to medical men, to the public, and to all actively engaged in the attempt ultimately to stamp out venereal diseases. If the absolute secrecy which has been promised in regard to their cases to all who attend venereal clinics can be violated at all, however high the reason, the public resort to these clinics may diminish. And yet all medical hope of the practical control of venereal diseases depends upon the fearless use by the public of treatment centres. Mr. Justice MCCARDIE'S action in a very difficult situation seems to demand an alteration of the law.

# Annotations.

"Ne quid nimis."

## INVESTIGATIONS WITH A LARGE QUANTITY OF RADIUM.

AN investigation is proceeding at the Middlesex Hospital, London, upon the effects of large quantities of radium in the treatment of cancer. The quantity of radium involved is nearly five grammes of the bromide, and the total quantity of material is used at each clinical application. This investigation arose at the suggestion of Mr. C. R. C. Lyster, until lately the head of the X ray and electrical department of the hospital. He saw the opportunity of putting to a practical test what has often been discussed by radiologists—namely, the treatment of cancer by a much larger quantity of radium than has hitherto been possible to anyone in this country. This suggestion was favourably received by the Medical Research Committee, which has generously provided all the facilities for this investigation, acting in concert with the Ministry of Munitions. Up to the present time it has been a matter for speculation whether the clinical results of exposing a malignant tumour to the rays from, say, a fifth of a gramme of radium for a certain number of hours would be improved if the intensity of the rays were increased 25 times, the time of exposure being correspondingly reduced; the opportunity is now provided for putting such an important question to the test. The fullest use is being made of the radium as occasion allows in the Cancer Research Laboratories of the Middlesex Hospital. There are many matters of fundamental importance in the field of radio-biology which in their turn have awaited the means for their solution. The difficulty hitherto has been to obtain a sufficiently intense source of gamma radiation, and this is now available. The possible danger to those concerned in handling such a quantity of radium as that in question has been carefully considered. When not in use the radium is kept in a safe, inside which is a lead case weighing over a ton, the radium being placed in a cavity in the middle of the lead. The thickness of lead used ensures that not more than 1 part in 1,000,000 of the gamma rays emitted by the radium penetrates the safe. All manipulations are made without contact of the operator's hands and the radium receptacle. It is hoped that in the near future a report upon the clinical and laboratory findings will be submitted to the Medical Research Committee.

These investigations add interest to the announcement made in the *Economic Review* of Dec. 31st, 1919, an invaluable source of weekly information from the foreign press, on the output of radium in France. The following paragraph occurs in the number referred to:—

*Output of Radium.*

The *Basler Nachr.* (Dec. 7th) reproduces from the General Report of the State of the French Industries the following details on radium production: "Several new radium extraction factories were established during the war. These factories produced on an average 18 g. of the radium yearly. In 1913 this radium was worth 750,000 francs per gramme; to-day it is worth 900,000 francs. The United States are the most dangerous competitors of France. In five years one factory produced 27 g. of radium at a price of 6,700,000 francs. Since 1913 three new radium factories have started in America.

It is interesting to note how the rare elements are coming into commercial production. Canada, for example, has taken up the separation of helium gas on a considerable scale, induced by the want of a gas lighter than air, but which is non-inflammable, for dirigible balloons. The density of helium is just under 2, while that of the atmosphere is 14·4, hydrogen being taken as unity. Not many years ago helium was a chemical curiosity, and its discovery by Ramsay was of great theoretical importance. It is, moreover, a degradation product of radium. Had the war continued a great industry would have been created in Canada, for it was estimated that 2,000,000 cubic feet of this gas could have been produced per month from the natural gas fields of Southern Alberta for use in our balloons at the front. The gases there evolved proved to contain 0·36 per cent. of helium. Not very many years ago we only knew it in traces in a vacuum tube, showing a brilliant yellow light corresponding with a line in the sun's spectrum, and until then it had not been recognised as existent on the earth at all. Radium is a still rarer element, but, as the above record shows, its output is increasing for therapeutical amongst other purposes.

## THE SURGERY OF THE PITUITARY: VICTOR HORSLEY'S WORK.

AN excellent treatise, *La patologia chirurgica dell' ipofisi*, by Dr. Giovanni Verga, published in Pavia some ten years ago, draws marked attention to work of Victor Horsley, some of which, the author informs us, has escaped publication. Dr. Verga's book is largely compiled from many sources and deals with the anatomy, physiology, and functions of the pituitary body and the symptoms connected with alterations in its structure or secretion, specially in reference to acromegaly, genito-adipose dystrophy, and cachexia. These three conditions are fully discussed in their relation to the pituitary body. Under the head of pathological anatomy the author brings forward a fund of information gleaned from various observers on congenital malformations, traumatic lesions, inflammatory processes, acute and chronic, in connexion with tuberculosis and syphilis, atrophy, and various degenerations and tumours. Tumours of the organ give rise to secondary changes in the sella turcica and in the organs at the base of the brain, and a photographic reproduction is given from a specimen in the Hunterian Museum by Professor A. Keith, showing the invasion by a pituitary adenoma of the surrounding parts. In the preface the author acknowledges a debt of gratitude to Horsley for permission to publish 12 cases, drawn from his practice in the National Hospital for Paralysis and Epilepsy (Queen-square) and from his private practice. Some of these cases may hitherto have escaped publication, and they are to be found in detail in Dr. Verga's book. They afford valuable information as regards the symptomatology of pituitary tumours, which the author has largely drawn upon in a chapter which occupies a considerable portion of the book. In the cases operated on by Horsley a diagnosis was made from the symptoms and subsequently confirmed. The operation was performed in two stages at an interval of 4–5 days, the first consisting of a free craniectomy in the temporo-parietal region, the second of incision of the dura, raising the temporo-sphenoidal lobe, and extirpation of the tumour. In one case only was the craniectomy frontal and

the operation conducted along the anterior cranial fossa. In these 12 cases, there were four deaths, two immediate and two at dates 8 and 18 months after operation. Dr. Verga compares these results with those of v. Eiselberg, Hochenegg, and Hirsh, who operated by the transphenoidal method of Schloffer, in whose cases a large recovery of vision took place, a fact which, if it took place, is not mentioned in Horsley's cases. The book, which is specially praiseworthy in its large outlook, will be useful to all interested in this branch of surgical pathology; it contains an extensive bibliography of over 400 names, showing an extensive range of collation.

## THE INCIDENCE OF CANCER MORTALITY.

Louis I. Dublin[1] has analysed the cancer mortality experience of the Metropolitan Life Insurance Company of New York during the six years 1911–16. He concludes that cancer is more frequent in the industrial class than in those of higher economic status. This is contrary to the generally held opinion that luxurious living conduces to cancer, but is in harmony with the close association of cancer with chronic irritation of various kinds. His figures show no evidence of an increase in cancer death-rates over the six-year period studied. It is worth noting, however, that the cancer mortality in the United States is 30 per cent. less than that in England and Wales (70 per 100,000 as compared with 100–110 per 100,000), and it is hard to believe that such a wide difference can be entirely real as between two populations of common origin living under very similar conditions. The original must be consulted for the details of organ, sex, age, and colour incidence. The paper is interesting as an indication of the tendency in modern statistical investigations of cancer to aim at more and more homogeneous groups by repeated subdivision of the data, so as to eliminate, or allow for, the many uncontrollable factors which influence the incidence of the disease.

## THE CORRELATION OF EGGS AND NESTS.

IT is not always that *Biometrika* contains papers which are both interesting and comprehensible to those untrained in statistical mathematics, but the "coöperative study" in the issue of November last, on the Nest and Eggs of the Common Tern, is an exception. In a previous paper the authors had made a preliminary study, on material collected in 1913, chiefly with a view to determining the extent of the similarity in measurement and in colour between eggs of the same clutch. This is repeated for observations made in 1914, and the curious result is reached that both in measurements and in colour and mottling there was conspicuously greater resemblance between the eggs of one clutch in 1914 than in 1913. More interesting, perhaps, to the field naturalist is the attempt to discover whether there is any correlation between the type of egg and the form of nest. The eggs are either green or brown in ground-colour, and vary considerably in extent of mottling, and the nests may be classified into: (*a*) "simple"—i.e., with no material collected, and either no hole or merely a depression; and (*b*) "complex," consisting of a hole with nest material accumulated around it. The conclusion arrived at is that although neither brown nor green egg layers are the more elaborate nest-builders, the denser brown and lighter green eggs are somewhat more usually associated with simple nests, and lighter brown or darker green with those of more elaborate construction. Larger blotches tend to be found in simple, finer mottling in elaborate nests, and the eggs in mere holes are rounder than those in complex nests. The most interesting problem considered—unfortunately not completely solved—is that of eggs of different colour in the same nest. In about 8 per cent. of the clutches brown and green eggs were found together, and three hypotheses are considered. 1. That the terns consist of two "gentes," one of which lays brown, the other green eggs, and that the mixture arises from the existence of "cuckoo-terns," which lay in other hens' nests. The rarity of four-egg clutches, which must be expected to occur if a cuckoo-tern lays in a nest already containing three eggs, makes this suggestion unlikely. 2. Since the proportion of green eggs increases with the size of the clutch, it seemed possible that a hen lays brown eggs more frequently at first, and green eggs later, but the statistics do not support this hypothesis. 3. The remaining suggestion, regarded as perhaps most probable, is that there are two "gentes," one of which lays chiefly brown and the other chiefly green eggs, but that each may occasionally lay an egg of the other colour. The paper is illustrated with an admirable series of photographs of the terns on their nests.

[1] Journal of Cancer Research, 1919, iv., 235.

## LATENT MALARIA.

THE clinical symptoms of latent malaria, such as splenomegaly, mononucleosis, basophilia of the red cells, pigmentation of the leucocytes, &c., are often wanting, and it is necessary to use provocative measures to ensure the passage of the parasite into the blood stream or produce a typical febrile attack, with the object of instituting vigorous treatment and eliminating carriers. With this intent many measures have been devised by various observers, and two papers in a recent issue of *Il Policlinico* (Practical Section, Nov. 30th, 1919) are of interest as bearing on this important subject, which has come into prominence owing to the large number of demobilised and discharged soldiers now in this country who have suffered from malaria while on active service. Dr. A. Dazzi experimented on 20 patients with injections of adrenalin, in 12 of whom repeated examination of the blood failed to discover parasites, while in the other 8 only occasional forms in various phases of development were found. His investigations show that the administration of a milligramme of adrenalin was harmless to the patients and did not cause a typical febrile attack, but was always followed by the evidence of the plasmodium in the blood stream. The presence of the parasite was transitory, and began about 20 minutes after the injection, reaching its acme in about one hour. After 24 hours the parasite was no longer demonstrable. In cases in which the parasite was already present in scanty numbers the action of adrenalin caused a striking increase, while it also occasioned a marked diminution in the size of the spleen, except in cases of advanced sclerosis of the organ. This shrinking began a few minutes after the injection and lasted several hours, the action of the drug being apparently to induce contraction of the muscular tissue of all the splenic vessels, causing a kind of squeezing of the whole organ, by means of which the parasites lodged in its substance were expelled into the

general circulation. The second paper is by Professor T. Silvestri, who experimented with splenic irradiation with a quartz lamp, the injection of adrenalin, paraganglin, horse serum, &c. In his hands the injection of a milligramme of adrenalin caused a specific febrile attack, rarely on the same day, most often on the following day, and sometimes only after 2–4 days, accompanied by the presence of the parasite in the blood; sometimes a second injection was necessary. He prefers, however, the use of strychnine by mouth in doses of 1–3 mg. daily as being a method which combines certainty with simplicity. As a rule the attack was not delayed beyond the third or fourth day. The mobilisation of the plasmodium, whatever the means used with this object, is to be advocated not only for diagnosis, but also for individual and general prophylaxis and for treatment. Professor Silvestri is of opinion that the practice of mobilising the parasite should form an integral part in the actual treatment of malaria, as only by this means is it possible to arrive at complete sterilisation of the organism and the cure of forms which have hitherto been rebellious to the most energetic treatment.

## HIBERNATION OF HOUSE-FLIES.

THE question in a current pantomine song, Where do flies go in the winter-time? gives public expression to the mystery of the winter fly. The problem of finding where, and in what stage, the house-fly passes the colder months of the year, is one that has been of interest to entomologists for many years, but in spite of numerous investigations, hitherto no satisfactory solution has been obtained. At present, opinion is fairly evenly divided between those who consider that the fly passes the winter in the adult stage, and those who believe that the immature stages are of most importance in the continuance of the species to the following year. Very serious objections can be produced against both views. Although occasional adults can be found in human habitations during the winter months, they are exceedingly rare, and hitherto experimental attempts to keep house-flies alive through the winter have failed. On the other hand, although the common house-fly, *Musca domestica*, can certainly pass the winter in the immature stages, either as larvæ or pupæ, the localities in which they breed again present difficulties. Although they have been recorded once or twice from manure heaps, a recent observer, Mr. J. E. M. Mellor,[1] failed to obtain a single example of *M. domestica* after a very careful examination of numerous manure heaps and other likely places during the winters of 1916 and 1916–17. Thirty-nine other species of flies were obtained, some of which occur in houses, but not *M. domestica* itself. In reference to this problem the observations of M. E. Séguy, of Rambouillet, France, are of the greatest interest. These are briefly recorded by Mr. D. Keilin, Sc.D., in an appendix to his article in *Parasitology* (briefly summarised in another column) on flies living in molluscs, and suggest that one way, at least, in which the house-fly may pass the winter is as a larva feeding on snails. M. Séguy placed living snails into a jar containing some larvæ of *M. domestica*, and in eight days the molluscs were completely devoured. Similar results were obtained by confining snails with a few pairs of the adult flies, the newly-hatched larvæ boring their way into the snails and, after devouring one, passing easily into another. Apparently in nature the larvæ can live in the snail during the winter, for out of 50 snails collected in the middle of January no less than nine contained immature stages of *M. domestica*. Should this important observation be confirmed, a very unexpected light will be thrown upon the mystery of the hibernation of the house-fly, and something may then be done to remedy the fate of the "fly-villas," as they have been called, situated within reach of refuse dumps.

[1] Annals of Applied Biology, September, 1919.

## MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE FRIENDLY SOCIETY.

FROM time to time there have appeared in these columns accounts of the monthly meetings of the Medical Sickness, Annuity, and Life Assurance Friendly Society, and we hope that those who have read them and were not members of the Society may have wondered at their neglect to take advantage of an organisation with such practical aims and large possibilities. Since 1884 the Society has been endeavouring to demonstrate to practitioners that they could save some 25 per cent. on insurance premiums for sickness by insuring in this Society, their aim here being partly on the lines of the Medical Insurance Committee, which is now becoming a regular source of income to the best medical charities. Partial success has been obtained in that 3500 members of the medical profession are insured in it, but the profession numbers more than ten times the total. Founded by, for, and run by medical men, a society of this nature should have appealed to a greater proportion of the constituency. Besides the usual life assurances in the form of endowment, annuities, &c., the special feature of the Society, framed to meet the peculiar requirements of medical men, is the sickness insurance. This is in the nature of a permanent contract to the age of 65, renewable and terminable at the option of the insured and not of the company, a most important point; for the insurance of a sum per week, payable in full for the first 26 weeks of incapacity and half the full amount thereafter so long as the incapacity continues, up to the age of 65 provides not only cover for a temporary illness, but also against practically permanent breakdown. Many cases have arisen where men have had to draw this insurance till the limiting age, which proves that such a scheme is required. It seems to us that if more members of the profession availed themselves of the opportunity provided and insured in the Society, we should not have so many sad appeals for assistance from men broken in health. For what, after all, is the fate of the average medical practitioner after, say, a year's illness? Too often his practice has gone, and then comes that steady struggle against odds until the inevitable loss of livelihood. Full particulars of the Society can be obtained from Mr. Bertram Sutton, secretary, Medical Sickness, Annuity, and Life Assurance Friendly Society, at 300, High Holborn, London, W.C.1.

## THE "SCHWEIZERISCHE MEDIZINISCHE WOCHENSCHRIFT."

WITH the first issue of the New Year the *Correspondenz-Blatt für Schweizer Ärzte* increased its format to the familiar size of the *Deutsche* and *Münchener*, and became in external appearance the important medical organ which its contents have

long justified. Established 50 years ago, it has been the medium through which most of the important discoveries and observations of Swiss physicians and surgeons, whether French- or German-speaking, and the proceedings of Swiss medical societies have reached the outside world. The journal gains by the change in both its main sections. The length of the line in original communications has been reduced from 5 in. in a single column to 4 in. in two columns—a boon to the reader. In the abstracts and reviews the line has been increased with equal advantage. No one will grudge the editors of the journal, and especially the learned Professor Ernst Hedinger, the increased recognition which the change must bring about. Switzerland, by reason of its central position and natural attractions, possesses advantages for post-graduate study of which every civilised nation has been quick to avail itself, and at the end of last century Kocher, Sahli, and Langhans at Berne represented the highest level of surgery, medicine, and pathology. A wholesome cosmopolitan spirit pervades medical schools so closely in touch with neighbours of different nationality but similar tongue, and this spirit is also evident in the Swiss medical weekly. We commend its perusal to those who command the French and German languages, but have insufficient time to study the medical literature of the continent in extenso.

## THE RAT HUNT.

THE brief career of the Vermin Repression Society has been a glorious one, for, unlike its two predecessors, it has secured the passage through Parliament of a Rats and Mice Act, which if properly administered will go far to rid the country of a dangerous and destructive pest. Lord Aberconway, chairman of the Society, who presided at the dinner, held at the Connaught Rooms, London, on Friday, Jan. 9th, to celebrate the passing of the Act, queried whether, the work of the Society having culminated in legislation, it might now be disbanded. But the Government representative at the dinner, Sir Arthur Griffith-Boscawen, said that he regarded the Society as only at the beginning of its work. The new Act empowered any local sanitary authority to carry out the destruction of rats on the premises of a negligent private owner, charging him with the expense incurred. The Act also empowered the Ministry of Agriculture to do the same in regard to negligent local authorities. The Vermin Repression Society should, he thought, undertake the task of keeping the new Ministry up to the mark. It is not necessary any longer to dwell upon the economic loss occasioned by rats. In the United States they annually consume 35 to 50 million dollars' worth of grain; in Great Britain the whole cost of old-age pensions might be saved. Fortunately, useful knowledge is accumulating for an effective campaign. To the employment of viruses attaches the double objection of the probable adaptation of the vermin to the poison and the possible development of virulence for man. They are being discontinued in favour of chemical agents, which have a selective toxicity for the rat alone, and do not, like strychnine, arsenic, and phosphorus, leave a trail of unintended victims. At present barium carbonate and extract of squills hold the field. Two grains of the former suffice to kill a medium-sized rat, although innocuous to domestic animals, cats and chickens, and the specific toxicity of squills appears to be still greater. We badly need for common use an up-to-date comparative table of poisons, with their toxic and lethal doses per kilo of body-weight for different members of the animal kingdom. Apart from efficient tools, organisation is, of course, the chief requisite in a successful anti-rat campaign. In one of the home areas the county organising officer has recently conferred with representatives of most of the local sanitary authorities in the county, and a pamphlet has been issued detailing an effective campaign and the precise measures of carrying it out. We may hope that the campaign will attain the same notoriety as that organised in Denmark by Emil Zuschlag in 1907, when this indefatigable enemy of the rat was freely caricatured as a Robespierre.[1] If this happens, the brown rat may soon be hunted down as successfully by man as the brown rat has already eliminated its predecessor, the black rat. Whatever else is done, at least all storeplaces of food should be rat-proofed.

---

THE King of Italy has conferred the Cross of the Order of the Crown of Italy on Sir Donald MacAlister, K.C.B., President of the General Medical Council, for services in the war, and the special permission to wear the decoration in this country has been granted him by Royal Warrant.

---

Sir John Bland-Sutton has been elected first President of the Association of Surgeons of Great Britain and Ireland, which held its inaugural meeting on Jan. 8th, Sir Rickman Godlee presiding. The Association is the outcome of a feeling expressed by Sir Berkeley Moynihan, six years ago, that no adequate occasion at present exists for a fully representative debate on surgical topics.

---

THE number of medical students registered during the past year is 3393. The figures for the previous years, as supplied by the Registrar of the General Medical Council, are as follows:—

| *1912* | *1913* | *1914* | *1915* | *1916* | *1917* | *1918* |
|---|---|---|---|---|---|---|
| 1397 | 1480 | 1600 | 1918 | 1875 | 2150 | 2253 |

The number of dental students registered during the past year is 612, and the figures for the previous years are as follows:—

| *1912* | *1913* | *1914* | *1915* | *1916* | *1917* | *1918* |
|---|---|---|---|---|---|---|
| 336 | 361 | 294 | 217 | 158 | 143 | 161 |

---

A SPECIAL general meeting of the Royal Society will be held on Jan. 22nd, at 3.30 o'clock, the Prince of Wales having expressed his intention to attend for admission into the Society on that day.

---

THE announcement to the effect that Professor Starling has been appointed Director of Medicine at St. Thomas's Hospital (University of London), in connexion with the formation of University units, is incorrect.

---

[1] See The Rat Problem, by W. R. Boelter, London, 1909.

## INDEX TO "THE LANCET," VOL. II., 1919.

THE Index and Title-page to Vol. II., 1919, which was completed with the issue of Dec. 27th, is given in this number of THE LANCET, and will not be issued separately.

## MEDICAL PRACTICE IN BOLSHEVIST HUNGARY.

(FROM OUR OWN CORRESPONDENT.)

ALONE among the "intellectual" occupations, medical practice was regarded as "productive" occupation by the Bolshevists, and the physician was allowed to carry on either as a private practitioner or as public employee. While lawyers, professors, and judges in towns were not allowed to keep more than three rooms, including office, the remainder being filled with labourers, medical men were left with living rooms, separate office, and reception rooms.

In the earliest days of Bolshevism the rumour spread that the medical profession would be nationalised, and had the regime lasted longer it would doubtless have happened. The proposal was for every physician to receive from the State a salary of 30,000 crowns (£2500 peace value, at present not worth more than £150) without distinction of rank or position. He was to be at the service of the public with his best knowledge for six hours a day. Up to 32 years of age only practice in public hospitals or in villages was to be allowed. After six years' practice in the country the physician might settle in a town. The one exception in regard to higher salary affected university professors, who were to receive 50,000 crowns a year. The treatment of the public was to be wholly gratuitous; no private practice would have been allowed, and the acceptance of fees or gifts for medical work would have been subject to prosecution.

Almost all the intellectual classes, the so-called "lateiner" occupations, were handled with animosity as "bourgeois" people. As regards bread, they were rationed in the third class, with 250 g. a day. The medical profession, luckily, ranked in the second class, along with iron and metal workers, as "brain labourers," with 350 g. In the first class were soldiers of the Red Army, with 500 g. Medical men were compelled to combine in trade-unions, since only members of such unions were allowed to purchase (at maximum prices) foodstuffs, industrial articles, clothes, or boots. Public baths, libraries, and theatres were only open to trade-unionists. Many who remained outside had to dispense with the most elementary necessities of life. Their children were unable to obtain school-books or clothes, and in the last months of Bolshevik rule were a sorry sight.

In the medical faculty of the University itself professors of world-wide repute were thrown out of position on account of their membership of certain religious societies or for having previously shown anti-socialistic feeling. On the other hand, former members of socialist clubs, without special qualification, have been promoted to the rank of lecturer and even professor. Students applying for admission to socialistic trade-unions have been aided by the State with a monthly support of 500 crowns. The teaching of religion has been prohibited, even in elementary and secondary schools, and the theological faculty of the University has been closed. To the medical faculty an edict went out that the doctrines of Marx and Lassale should be the subject of lectures occupying six hours weekly.

Even after the termination of Bolshevism the medical faculty was not suffered to rest in peace. The authorities of Budapest removed from their positions at the municipal hospitals all doctors who obtained advancement during the Bolshevik era. Dr. Emile Grôsz, professor of ophthalmology, who was president of the Hungarian section at the International Medical Congress held in London during 1913, was an object of rancour by the reactionary elements of his audience, and has been driven out of his institute because he undertook the position of "confidential man" of the medical faculty during Bolshevism. A similar fate has met Dr. Plosz (lecturer on pathological chemistry) and Dr. Illyés (operative urology). The present position of the medical profession is not rosy. Although medical fees have been raised twenty-fold, most medical men are suffering great hardships. Whereas in peace time a physician in Budapest was satisfied with 10 crowns (8s.) for a call to the patient's house, he has now to ask 100 crowns (£4 in peace value), and even so he is unable to earn enough to cover the current prices of such things as milk at 10 crowns a litre, bread at 20 crowns a kg., matches at 2 crowns a box, eggs at 5–6 crowns apiece, and boots at 800 crowns a pair. High fees involve fewer patients; the general lack of work and shortness of money among the labouring classes has curtailed their ability to pay medical fees. These facts, in conjunction with the great want of foodstuffs and fuel in the city, are causing the mass emigration of medical men from Budapest. Daily 20–30 physicians are leaving the capital with their families to seek easier maintenance and better earnings in the villages and smaller towns.

Nagyvárad.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Irish Medical Committee and the Irish Public Health Council.*

A MEETING of the Irish Medical Committee was held in the Royal College of Surgeons on Jan. 6th, Mr. R. J. Johnstone in the chair. A letter was read from Dr. E. Coey Bigger, chairman of the Irish Public Health Council, stating that at a recent meeting the Council had had under consideration the question of the reform of the medical service in Ireland, and had decided to recommend to the Irish Government the establishment of an Irish Medical Service appointed by competitive examination, with fixed scales of salaries, rights to pension, study leave, &c. Consequent on this decision, the Council had also considered the functions and duties to be entrusted to the medical officers of the service, but before coming to a decision the Council wished to have the assistance of representatives of the medical profession. In particular, advice was sought as to the classes of the community which would be entitled to medical attendance in connexion with the service. He therefore requested the Irish Medical Committee to nominate a few representatives to attend the next meeting of the Council.

The Irish Medical Committee selected the following representatives: Mr. R. J. Johnstone, chairman; Dr. Joseph Power, vice-chairman; and Dr. J. S. Darling (Lurgan), Dr. J. M. Day (Dublin), President of the Irish Medical Association, Dr. W. R. Morris (Waterford), Dr. O'Connor (Queenstown), Dr. W. J. O'Sullivan (Killarney), Dr. E. Thompson (Omagh), Dr. H. T. A. Warnock (Donegal), and Dr. W. W. Murphy (Coolgreany). The deputation was instructed to suggest that the class to be attended by the medical service should be restricted by an income-limit of £3 a week, and that a minimal salary of £650 a year for medical officers should be suggested. The deputation was also appointed as a standing committee to watch the proceedings of the Irish Public Health Council, and give it any further assistance it might require. The interview of the deputation with the Irish Public Health Council took place on the following day. Dealing with other matters, the Irish Medical Committee passed the following resolutions:—

(1) "That the scheme in existence for medical attendance on discharged disabled soldiers and sailors has proved unsatisfactory both as to the inadequacy of the remuneration and to its method of distribution."

(2) "That the remuneration for certification under the Insurance Act is insufficient, and should be increased by the sum which is returned unexpended each year to the Treasury out of the Equivalent Grant. That as Ireland has to pay one year with another her full quota towards the administrative expenditure of the Act in England, Scotland, and Wales, we consider it grossly unfair that the Irish medical profession should be deprived of their money."

A letter was read from Dr. O'Sullivan stating that the medical practitioners in the Limerick area had refused the capitation fee for medical treatment of Post Office employees, and were now working a scheme under which they received 10s. a visit, exclusive of medicines. This arrangement was considered by the Irish Medical Committee to be quite satisfactory.

*The Humane Slaughtering of Animals.*

A suggestive discussion took place in Belfast, at a meeting held on Jan. 9th under the ægis of the Ulster Society for the Prevention of Cruelty to Animals, whose members protest against the methods of slaughtering animals at present in vogue at the Belfast city abattoir, and urge the substitution of the pistol (as a more humane method) for the pole-axe. Those on one side urged that the system in use was needlessly cruel and inhuman, and that it arose from ignorance and prejudice. On the other hand, those members of the corporation in charge of the Markets Committee of the City Corporation, who had visited other places, alleged that the humane killer they found was not much in use. The butchers, who said they were prepared to adopt the most humane method which could be devised, objected to the pistol (so-called humane plan); meat-traders declared that the meat of the animal thus killed did not keep because the animal did not bleed sufficiently, and that, owing to the tissues being full of blood, decomposition set in immediately, especially in summer weather. Further, it was alleged that the blood of the animal killed by the humane method was much darker in colour than that of the animal killed by the pole-axe, and consequently the flesh was darker; and the speakers on the butchers' side asked for an explanation of this alleged fact. The upshot of a discussion—in which there was a marked difference of opinion—was satisfactory, for the master-butchers, who naturally resented any charge of inhumanity, gave an assurance that if it could be proved that the pistol was the better method of killing animals, and that it could be used with economic advantage, they were prepared to adopt it. It lies now with the Ulster Society for the Prevention of Cruelty to Animals to accept this challenge and to prove their case to the satisfaction of the meat-traders, and the consumers of such animal food.

*Accidental Shooting of a Medical Man.*

An unfortunate incident happened in co. Clare on the night of Jan. 3rd. A police patrol had been attacked and shots were fired on both sides. The attackers had fled, when Dr. Denis J. Keane, a highly respected medical man of Ennistymon, returning from a visit to a patient, came along the road in his motor-car. The police, thinking he had some connexion with the party that had attacked them, fired at Dr. Keane, wounding him in the forearm. He is progressing satisfactorily.

Jan. 12th.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

*New Health Bill.*

THE Victorian Government has introduced a new measure dealing with public health administration. The main features of interest are that the existing Board of Public Health, which is a body of lay municipal representatives, is to be abolished and replaced by a commission of seven members nominated by the Governor in Council. In the Bill as it stands two of these are to be medical men, but it is possible that this will be altered, as the medical profession in Victoria is not in favour in Parliamentary circles owing to the continued deadlock between the B.M.A. and the friendly societies. The most hopeful provision of the Bill is the power given to create health areas under whole-time officers, but it all remains to be done by proclamation. The Labour Party and a section of the press clamour for some measure of free medical attendance by Government doctors, but it is improbable that much in that direction will be enacted under the present Bill. At the same time "the health of the people" has become a political catchword in Federal politics, and the Federal quarantine authorities are aiming at taking the whole control of public health administration. It appears almost certain that some proposal for a national medical service of a clinical nature will be part of such a control, whichever side happens to come into power. In New South Wales a very considerable degree of State medical attendance already exists, and the Adelaide General Hospital in South Australia has been a Government institution for many years.

*The Custody of a Child.*

The application of Dr. J. S. Macpherson, C.M.G., to be given the custody of his daughter by a former wife, which has already been mentioned in this column,[1] has been the subject of further litigation. On the order of the High Court the father was entitled to succeed, and his daughter was handed into his care. They left together by the Sydney express en route for Canada. At Albury, where it is necessary to change trains, the girl disappeared and, it is alleged, was driven away in a motor-car belonging to a relative of the Thornley family, who are disputing the father's claim. Dr. Macpherson then brought proceedings to compel the production of the girl. The witnesses who were called all professed entire ignorance of the girl's whereabouts, although it was admitted she was quite safe and happy. Mr. Justice Hood decided there was no evidence to commit anyone for conspiracy, and the counsel for the prosecution then asked for an adjournment sine die. There the matter now stands. It is understood the daughter has expressed her determination to remain with her mother's relatives.

*University of Sydney.*

At a recent election of ten members of the Senate of the Sydney University four members of the medical profession were elected, including a lady, Dr. Constance Darcy, who is regarded as representing specially the interest of the women graduates.

*Federal Medical Relief Fund.*

The Federal Medical Relief Fund for medical officers suffering as a result of the war, which was advocated by the various State branches of the B.M.A. and fixed at a prospective sum of £50,000, has reached a total of £9015. This sum does not represent more than a small number of subscribers in each State, and the response has not come up to the expectation of the promoters. The lukewarmness appears due not to any disapproval of the scheme, but to a doubt that there is any occasion to raise such a large amount for the purpose. Under the Government repatriation legislation there appears to be local difference of attitude towards the application of returned medical men for assistance in resuming practice. In Victoria such applications have been refused, but in other States it is said that assistance has been given.

*Post-Graduate Course.*

A very successful post-graduate course for returned medical officers and others has been carried out by the Victorian branch of the B.M.A. The whole of the Melbourne general and special hospitals were open to visitors, and a special programme was arranged in such directions as were likely to prove of most interest. The courses at the Women's Hospital and at the Children's Hospital were largely attended, while the clinics of other special institutions and the classes at the teaching hospitals were much appreciated. It is probable that this course, which extended over a fortnight, will be made an annual function.

*Strange Fatality.*

The death of Dr. Norman Gerrard was announced recently under peculiar circumstances. Dr. Gerrard graduated from the Melbourne University in 1905, and at the time of his death was in country practice in Victoria. He developed a sore-throat, which was accompanied within a few hours by such a sense of suffocation that he attempted to perform tracheotomy on himself. At the inquest it was stated that the incision had been correctly made, and that death had resulted from hæmorrhage into the trachea.

*Fatal Barium Meal.*

A patient in the Sydney Hospital died after taking a barium meal. At the inquest a verdict stated death resulted from the effects of a soluble barium salt, and the

[1] THE LANCET, Nov. 8th, 1919, p. 849.

coroner said if the hospital regulations had been carried out there would have been no catastrophe. It appeared that the barium compound had not been directly issued from the dispensary for the case, but had been obtained from another ward because the dispensary was closed, and was a sample issued some time previously for a case for which it had not been used.

Nov. 18th, 1919.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Recrudescence of Influenza.*

INFLUENZA appears to be recurring in Paris. Every day there is a slight increase in the number of cases, which are not, however, very serious, nor is the mortality nearly as formidable as that of last year's epidemic. The most striking feature of the present outbreak is the appearance of the disease in a new form. The pulmonary symptoms are less severe; the temperature runs fairly high, but is irregular, with inexplicable remissions. Vomiting and constipation may be present and, above all, a peculiar torpor, a sort of stupefied condition, with a tendency to sleep, shows the marked effect of the infection on the central nervous system. Deaths have been recorded, but in general the patients recover after two or three weeks. The Administration de l'Assistance Publique has decided to group all such cases together under the care of Dr. Renon at the Hôpital Necker, so that a detailed study can be made of them. Blood cultures have been tried, but no very clear results have been obtained up to the present.

*Encephalitis Lethargica.*

Another epidemic is at the moment attacking Paris and the Paris district. Professor Netter noted its appearance in the spring of last year and called it encephalitis lethargica. Its characteristic features are bad headache, with paralysis of the oculo-motor nerve, and a continuous inclination to sleep; fever runs high. No special germ has been isolated in culture. Post mortem there is a marked congestion of all parts of the brain. The nature of this malady is not yet well understood. At any rate, it is not sleeping sickness, brought into France by the black African troops. During the course of last year a few cases occurred, but the disease seemed to be stamped out at the end of the summer. M. Netter has just notified eight new cases to the Academy of Medicine. Two are dead, two have recovered, and four cases are still under treatment.

*Microbic Defence against Infection.*

Dr. Roux, Director of the Pasteur Institute of Paris, has brought to the notice of the Académie des Sciences two sets of observations made by one of his pupils, M. d'Herelle, which seem to open a new chapter in the general pathology of infection. He has shown that in the stools of convalescent dysenteric patients a filterable virus, invisible to the ultra-microscope, can be found. It can be cultivated and has a remarkable bacteriolytic action on Shiga's bacillus. When introduced into dysenteric patients it has a selective action on this bacillus, and ends by destroying it. This action differs markedly from the well-known effect of the lactic acid bacillus, which merely hinders the development of intestinal bacilli by modifying the medium in which they grow. In this case the invisible virus has a direct action on Shiga's bacillus, which is actually dissolved thereby. Patients suffering from dysentery have been treated with much success by cultures of this filter-passer, which appears innocuous to man and which will possibly in the future replace anti-dysenteric serum. The virus shows similar bacteriolytic action towards other bacteria. M. d'Herelle has been able by this method to treat cholera in fowls—a disease nearly always fatal. M. Kabeshima has similarly been able to render rabbits immune to the dysentery bacillus. This bacillus, introduced into the intestine of rabbits who have previously been fed with a culture of M. d'Herelle's invisible filter-passer, rapidly disappeared without producing any symptoms of dysentery. M. Roux has pointed out that we have here a discovery of considerable importance in the future treatment of infective diseases. We can foresee henceforward the adoption of a new treatment of dysentery, and perhaps of enteric, founded on this method.

*Rectal Injections of Bile for Constipation.*

MM. Bensaude and Vicente, in order to make use of the well-known stimulating action of bile on the intestine, which they have verified by X ray observations, have used ox-bile injections for constipation with complete success. They use a dose of 4 g. to 5 g. of dry extract of ox-bile dissolved in a quarter of a litre of tepid water. After five to ten minutes a complete evacuation of the bowels takes place, generally without colic or pain of any sort. These injections act as well in acute as in chronic constipation; they have succeeded in cases where the classical injections of senna or of sodium sulphate have failed. In several cases bile injections have been repeatedly used for six months without either intolerance or diminution of action being exhibited. Historical investigations have shown that these facts were known from the most ancient times, and that the Egyptians themselves were aware of this method of treatment.

Jan. 10th.

## THE FELLOWSHIP OF MEDICINE.

AT a meeting of the general executive committee of the Fellowship of Medicine and Post-Graduate Medical Association, held on Jan. 5th at No. 1, Wimpole-street, London, W., Sir HUMPHRY ROLLESTON presiding, a resolution was passed in silence recording the profound sorrow of the Association at the loss of their President, Sir William Osler, and expressing the belief that without his guidance and support the success they have obtained would have been impossible.

The report of the special subcommittee appointed to draw up a plan of future work was submitted and approved as follows:—

1. *Post-Graduate General Courses for General Practitioners.*—A series of courses dealing with the various clinical subjects in the medical curriculum, from the general practitioner's point of view, each lasting a fortnight or more, should be arranged by single institutions or by groups of institutions. These institutions would be of two kinds: (*a*) those, such as the existing post-graduate institutions, providing post-graduate instruction through the greater part of the year; and (*b*) those undergraduate schools which are willing to provide short courses from time to time.

2. *Post-Graduate Advanced and Special Courses.*—Consecutive series of advanced courses, each series dealing with one clinical subject from the specialist or advanced point of view should be arranged by the educational subcommittee with committees elected annually by separate meetings of London teachers interested in each subject, which should include the councils of the corresponding sections of the Royal Society of Medicine.

3. *Post-Graduate Students Preparing for Special Examinations.*—Courses for special examinations should be arranged for by individual schools as has been done in the past.

Pending the circulation of definite proposals for the future post-graduate programme a request has been circulated to medical schools and hospitals that any steps which are being taken to draw up a programme for post-graduate courses should be held in abeyance.

THE INCREASE OF MEDICAL FEES.—At a largely attended meeting of the practitioners resident in the area of the Kensington Division of the British Medical Association the following resolution was passed unanimously:—

"That this meeting of medical practitioners resident in Hammersmith, Kensington, and Paddington agrees that, owing to the altered value of money, it is necessary that the fees for professional work be increased by *at least* 50 per cent. on the fees prevailing before the war, and calls upon all practitioners resident in these areas to loyally carry out this recommendation, as is being done in all parts of London and the provinces, it being understood that in cases (known to the practitioner) where such an increase would be the infliction of a hardship he will use his own estimate of the fees to be demanded in these circumstances."

# Correspondence.

"Audi alteram partem."

## VENEREAL DISEASE AND PROFESSIONAL SECRECY.

*To the Editor of* THE LANCET.

SIR,—Mr. Justice McCardie's ruling in a recent divorce case, by which he set aside the principle of professional secrecy and compelled a medical man to give evidence as to syphilitic infection, will have an adverse influence on the prevention and treatment of venereal disease. The explanation given, that in a court of law there were "even higher considerations than those which prevailed with regard to the position of medical men," is beside the point. The question is not one of the position of medical men, but one of public health. If persons infected with venereal disease are liable to have the fact published in the public press they will avoid places of treatment where their names are registered, and will tend to resort to quacks. Again, the reason given for the abolition of secrecy in the case under discussion—to obtain evidence of cruelty—is quite inadequate. Every medical man who has had such cases to deal with knows the difficulty, often the impossibility, of tracing the source of infection, and any evidence obtained is open to so many sources of error as to be absolutely unreliable.

I am, Sir, yours faithfully,
C. F. MARSHALL, M.D., F.R.C.S.

Welbeck-street, London, W., Jan. 14th, 1920.

*** We have dealt in another column with the important case referred to by our correspondent.—ED. L.

## MEDICAL MEN IN PARLIAMENT.

*To the Editor of* THE LANCET.

SIR,—It will, I think, be of interest to your readers to direct their attention to the fact that the recent return of Lieutenant-Colonel F. E. Fremantle, F.R.C.S., F.R.C.P., as Member for St. Albans, gives the medical profession ten representatives in the House of Commons, exclusive of the two holding cabinet rank, and that of these no less than seven have accepted seats on the Council of this Federation. The recent elevation to the peerage of Sir Bertrand Dawson, G.C.V.O., C.B., gives the profession its only direct representative in the House of Lords, and the new peer also has a seat on our Council.

Colonel Fremantle, in writing to thank our Executive Committee for the help it was able to afford him in the recent by-election, states: "My need was obviously to rally all the forces I could muster to my aid, and no one answered the call more promptly or helpfully than did the Executive Committee of the Federation. I am sure that the help it gave was of great value, and I like to think that its congratulations are on the prospect of my being of some service both to the country and the profession."

I am asked to thank all those who assisted the candidate, at the request of the Federation, which is encouraged by the result of the election, to make further endeavours to increase medical representation.

I am, Sir, yours faithfully,
N. HOWARD MUMMERY,
General Secretary, British Federation of Medical and Allied Societies.

5, Vere-street, W. 1, Jan. 9th, 1920.

## SUBCUTANEOUS EMPHYSEMA IN PARTURITION.

*To the Editor of* THE LANCET.

SIR,—Mr. J. Good's letter in THE LANCET of Jan. 10th describes a case of subcutaneous emphysema in parturition. I had a similar case myself while in charge of a labour ward in a Poor-law infirmary some months ago.

The patient was a primipara, aged 19. She was extremely plethoric and heavily built, but appeared, however, to be in perfect health. During the first and second stages of labour she made very violent efforts at delivery, and as these were unavailing I terminated labour with forceps under light chloroform anæsthesia. On the following day I found that there was a large area of subcutaneous emphysema covering the upper part of the chest. The distribution was bilateral. It extended upwards as far as the angle of the jaw on both sides, and downwards as far as the fourth intercostal space. It was especially noticeable in the region of the apices of the lungs. Crepitus was elicited over the whole of this area. During the next few days the patient coughed up a moderate quantity of frothy sputum, and the emphysema gradually disappeared. The temperature rose to 100° F. on the second day, and remained at about that level for three days. This condition was accompanied by a slight cystitis. The urine was alkaline, somewhat offensive, and contained a trace of albumin. At no time did the patient complain of any pain or distress.

At the end of three weeks both conditions had completely subsided, and the patient was discharged from hospital. I am, Sir, yours faithfully,

Northwich, Jan. 12th, 1920. J. W. CRAW.

## A SAYING OF DR. GEE'S.

*To the Editor of* THE LANCET.

SIR,—In his interesting lecture, "The Dying-out of Native Races," reported in the last two issues of THE LANCET, Dr. W. H. R. Rivers quotes Dr. Gee as saying "Medicine has three parts: the first is diagnosis; the second is diagnosis; and the third is diagnosis." Dr. Rivers adds in a footnote that he has been unable to discover to whom this aphorism is originally due. Is it not probable that Dr. Gee was paraphrasing the dictum attributed to Demosthenes, who is said to have declared of his art, that it had three parts: the first was action; the second was action; and the third was action? I am, Sir, yours faithfully,

Harley-street, W., Jan. 11th, 1920. THOMAS HORDER.

## "THE JUSTIFIABILITY OF THERAPEUTIC LYING."

*To the Editor of* THE LANCET.

SIR,—Dr. Hildred Carlill, in replying to Dr. C. S. Myers's letter in your issue of Dec. 27th, observes, in defence of the methods he adopted in the case he reported (THE LANCET, Dec. 20th, 1919), "that the principles of this treatment of 18 months ago differ in no way from those to which I would have consented in the case of similar illness in a member of my own family." This is certainly some support for Dr. Carlill's reasoning, but no justification for his therapeutic procedures. In trephining a patient for a disorder of psychical origin Dr. Carlill has converted a functional disorder into an organic disability, and, moreover, one which renders the patient handicapped for life.

Such treatment seems to me to be worse than the disorder against which it is directed, and in my opinion constitutes an unjustifiable procedure and a dangerous precedent. Dr. Carlill complains that Dr. Myers offers no alternative treatment. Almost any treatment would be preferable, even none at all. If the medical profession has to resort to trephining for mental disorder its therapeutic armoury must indeed be empty.

Dr. Myers doubts whether deliberate lying is ever justified in therapy, to which Dr. Carlill replies that "deception in one of its many guises will probably continue to be used by some doctors for some cases as long as treatment of disease lasts ....." While admitting the truth of this statement, it may be opportune to emphasise that treatment by "suggestion" is not synonymous with deceit, and psycho-therapy includes various procedures other than "suggestion." The methods Dr. Carlill utilised in treating his patient appear to have been confined to hypnotic suggestion and crude suggestion conveyed by deception. Such a course as the analysis of the patient's mind, in an endeavour to discover the mental elements underlying these attacks, does not appear to have been considered. The attempt to discover a psychological basis for a mental state seems to be more reasonable than the

bludgeoning of a symptom by such a procedure as Dr. Carlill describes.

It would be interesting to see in what new guise the "relieved" symptom reappears.

I am, Sir, yours faithfully,

Queen Anne-street, W., Jan. 10th, 1920. IVO GEIKIE COBB.

## "MIND AND ITS DISORDERS."

*To the Editor of* THE LANCET.

SIR,—It is not the function of an author to answer critical reviews of his work, and it is not my intention to reply to your reviewer of my third edition of "Mind and its Disorders."[1] Owing to the intrinsic nature of psycho-analysis any such work is bound to meet opposition and denunciation, and this always will be so; but on account of Dr. J. E. Nicole's letter, in your issue of Jan. 10th, I feel called upon to clear the ground for any discussion which may arise therefrom and to explain why, after adopting a Freudian psycho-pathology of the maniacal-depressive psychosis, I have retained the account of my old "intraneuronic intoxication" hypothesis of that disorder.

The reasons are mainly three. In the first place, the two views are not incompatible, for psycho-pathological experience reveals that mental mechanisms may and do sometimes produce quite remarkable organic changes in the tissues. Secondly, the psycho-analytic point of view is extremely difficult to convey; for example, that there is a logic of feeling as well as of reason. The number of people who are unable to view matters from a Freudian standpoint is therefore very large; and it was partly out of consideration for these that it was decided to include the other hypothesis, so that they would not be left "high and dry" without a working scheme. Lastly, supposing the "intraneuronic intoxication" hypothesis to be all wrong, my experience has been that it helps students to remember the signs and symptoms of mania, melancholia, and energic stupor for examination purposes.

My own view of the mechanism of the above psychosis is that the primary factors are purely mental, that these induce metabolic changes in the tissues, and that these changes react further upon the mind in the manner detailed in the book.

I am, Sir, yours faithfully,

Cavendish-square, W., Jan. 13th, 1920. W. H. B. STODDART.

## THE PROBLEM OF VENEREAL DISEASE.

THE following statement has been sent to THE LANCET by the General Secretary of the National Council for Combating Venereal Diseases:—

A good deal of confusion has arisen in the public mind with regard to the distinction between the National Council for Combating Venereal Diseases and the recently formed Society for the Prevention of Venereal Disease. Both bodies take their stand on common ground in desiring the reduction and final elimination of the terrible scourge of syphilis and gonorrhœa from our national life. But they approach and deal with the problem from entirely different points of view. Basing their opinion on the findings of the Royal Commission on Venereal Disease and the experience gained during the war, the National Council contends that the strongest weapons available are, first, the education of all classes and sections of the community as to the causes, nature, and results of these diseases, and, secondly, the earliest possible treatment of infected persons. They also recognise that immediate local cleanliness after exposure to the risk of infection will reduce that risk, but, unfortunately, it is by no means an infallible preventive. Where propaganda stating that it is so has taken place, the amount of venereal disease has materially increased—vide the incidence among the Australian troops, starting as it did at 130 per 1000 and rising to 147 per 1000 as compared with the British troops' incidence of 38 per 1000. The Society for the Prevention of Venereal Disease consider that immediate self-disinfection is the only measure worthy of consideration from either a medical or social point of view. In this they are in disagreement with the opinion expressed by Lord Sandhurst on behalf of the Government during the debate in the House of Lords on Dec. 10th, when he stated that "even in circumstances specially favourable to instruction in the method proposed the risk of venereal disease is by no means certainly avoided. ..... How much more, then, would this be the case, and how far removed should we still be from secured immunity, with the civil population, in respect of whom the arrangements as to instruction and discipline adopted for the military would obviously be quite impossible?" The same view is held by an almost unanimous majority of medical officers of health and clinic officers throughout the country. Many of those who support the policy of the Society for the Prevention of Venereal Disease bear illustrious names rightly honoured in the medical world—but they do not represent those medical men and women who have had long and intimate experience of the practical problems involved in the successful prevention and treatment of venereal disease. The Society for the Prevention of Venereal Disease is therefore completely at variance with the National Council in regarding immediate self-disinfection as the one and only practical measure by which venereal disease can be exterminated. The National Council considers it but one of several weapons to be added to the armoury of education and prompt treatment.

81, Avenue Chambers, Southampton-row, London, W.C. 1.

[1] THE LANCET, Dec. 20th, 1919, p. 1143.

## URBAN VITAL STATISTICS.

(Week ended Jan. 10th, 1920.)

*English and Welsh Towns.*—In the 96 English and Welsh towns, with an aggregate civil population estimated at 16,500,000 persons, the annual rate of mortality, which had been 14·6, 12·0, and 16·2 in the three preceding weeks, fell to 15·8 per 1000. In London, with a population slightly exceeding 4,000,000 persons, the annual death-rate was 15·7, or 1·3 per 1000 below that recorded in the previous week, while among the remaining towns the rates ranged from 5·8 in Eastbourne, 6·2 in Wolverhampton, and 7·0 in Merthyr Tydfil, to 24·6 in Sunderland, 25·7 in Bootle, and 26·5 in Grimsby. The principal epidemic diseases caused 337 deaths, which corresponded to an annual rate of 1·1 per 1000, and comprised 107 from measles, 87 from diphtheria, 60 from infantile diarrhœa, 51 from whooping-cough, 26 from scarlet fever, 5 from enteric fever, and 1 from small-pox. Measles caused a death-rate of 1·5 in Plymouth and in Preston, 1·6 in Leeds, 1·7 in Darlington, 2·0 in Dewsbury, and 3·8 in Bootle; and diphtheria of 1·3 in Walthamstow and in Wigan. The fatal case of small-pox was registered in Gateshead. The 73 deaths from influenza were 21 in excess of the number in the previous week, and included 16 in London, 10 in Birmingham, 5 in Leeds, and 4 in Newcastle-upon-Tyne. There were 2809 cases of scarlet fever, 1899 of diphtheria, and 2 of small-pox under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 2926, 1873, and 0 respectively at the end of the previous week. The causes of 51 deaths in the 96 towns were uncertified, of which 7 were registered in Birmingham, 6 in London, and 4 in St. Helens.

*Scotch Towns.*—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2,500,000 persons, the annual rate of mortality, which had been 13·2, 14·8, and 15·9 in the three preceding weeks, further rose to 16·6 per 1000. The 402 deaths in Glasgow corresponded to an annual rate of 18·8 per 1000, and included 9 from measles, 4 from diphtheria, and 3 from infantile diarrhœa. The 97 deaths in Edinburgh were equal to a rate of 14·8 per 1000, and included 2 each from measles and diphtheria and 1 from infantile diarrhœa.

*Irish Towns.*—The 138 deaths in Dublin corresponded to an annual rate of 17·3, or 2·7 per 1000 below that recorded in the previous week, and included a fatal case each of scarlet fever and infantile diarrhœa. The 150 deaths in Belfast were equal to a rate of 18·9 per 1000, and included 19 from measles, 3 from scarlet fever, and 1 from infantile diarrhœa.

BRISTOL DISPENSARY.—At the annual meeting of this charity Mr. Fenwick Richards retired after many years' energetic service as chairman and treasurer amid general regret. This charity, which supplies domiciliary as well as out-patient treatment, is in low water financially and its premises are in need of repair. The new chairman is Mr. Norman Wills, a younger representative of the family that has done so much for Bristol, his brothers, Mr. H. H. Wills and Mr. G. A. Wills, being presidents of the Royal Infirmary and the General Hospital respectively.

# Medical News.

UNIVERSITY OF CAMBRIDGE: DIPLOMA IN RADIOLOGY AND ELECTROLOGY.—Under the auspices of the Fellowship of Medicine and Post-Graduate Medical Association the British Association of Radiology and Physiotherapy have arranged a series of lectures in radiology and electrology, qualifying for the Cambridge Diploma, to be given at the house of the Royal Society of Medicine, 1, Wimpole-street, London, every Monday and Wednesday at 5.30 P.M., commencing Feb. 2nd, 1920. The opening lecture will be given by Dr. W. J. Turrell of Oxford, who will deal with the history of electrotherapeutics. For those wishing to take the diploma the fee for the course is £15 15s., with the additional enrolment fee of 10s. 6d., to the Fellowship of Medicine and Post-Graduate Medical Association, but members of the Fellowship Post-Graduate Course are invited to attend any of the lectures advertised. A detailed syllabus will be issued shortly, and all information can be obtained from Miss M. A. Willis, Secretary to the Fellowship of Medicine and Post-Graduate Association, 1, Wimpole-street, London, W.

*The Psychological Laboratory.*—The Committee for the management of the Cambridge University Diploma of Psychological Medicine announces that examinations for the diploma will be held for Part I. in October, 1920, and for Part II. in December, 1920. A course in preparation for these examinations will be held at the Cambridge Psychological Laboratory from July 19th to August 29th inclusive, and will be conducted as follows:—

*Part I.*—Psychology, with practical work, J. P. Lowson, M.A., M.D.; Anatomy and Physiology of the Nervous System, with practical work, E. D. Adrian, M.A., M.D.

*Part II.*—Abnormal Psychology, J. F. E. Prideaux, M.D.; Psychiatry, Lunacy Law, and Asylum Administration, M. A. Archdale, M.D., Superintendent of the Cambridge County Asylum.

The fees are: For Part I., £5 5s.; for Part II., £4 4s. Further information may be obtained from the Director of the Cambridge University Psychological Laboratory.

UNIVERSITY OF LIVERPOOL.—The diploma in Public Health has been awarded to Dr. A. J. W. Cunningham, Dr. R. W. Gemmell, and Dr. D. S. A. O'Keeffe.

KING'S COLLEGE (UNIVERSITY OF LONDON): PSYCHOLOGICAL DEPARTMENT.—A course of eight lectures on psycho-pathology will be delivered by Dr. William Brown, reader in psychology in the University of London, at King's College, Strand, W.C., on Mondays, at 5.30 P.M., beginning on Jan. 26th. Although not open to the general public, the lectures may be attended by medical students and qualified medical practitioners without fee or ticket.

KING'S COLLEGE HOSPITAL (UNIVERSITY OF LONDON): POST-GRADUATE INSTRUCTION IN SYPHILIS.—A course of lectures on syphilis will be given by various members of the staff of King's College Hospital during the ensuing year, commencing Jan. 30th. They will be given on Fridays, at 9.15 P.M., in the Lecture Theatre in the Medical School, and will be illustrated as far as possible by cases, demonstrations of technique, and by the epidiascope. Each branch will be dealt with by a member of the staff with special experience of the subject, and it is hoped that a complete presentment of modern teaching on syphilis, and especially of those aspects which are of interest to practitioners, will be given. Those taking the course can also attend, by arrangement, for clinical teaching and practical instruction. The fee for the course is £3 3s., to be paid to the secretary of the Medical School, from whom all information can be obtained and the syllabus of the lectures.

THE SCIENTIFIC AND INDUSTRIAL RESEARCH DEPARTMENT.—The secretary of the department announces that the Research Association for the British Launderers' Industry has been approved by the department as complying with the conditions laid down in the Government scheme for the encouragement of industrial research. This concession is not surprising when regard is had to the fact that the business of the launderer is essentially a chemical one. The cleansing of dress fabrics by such materials as soaps, bleaches, reducing agents, and stain-removing solutions must be based on scientific lines if good results are to be got, rendering the processes involved effective economically while leaving the material uninjured. The question also of making dirty linen macroscopically and microscopically clean is clearly of sanitary importance. The association is to be registered as a non-profit-sharing company, the secretary of the committee engaged in its establishment being Mr. J. J. Stark, 162-5, Bank Chambers, 329, High Holborn, W.C. 2.

LITERARY INTELLIGENCE.—The sixth edition of Herman's "Difficult Labour," announced for publication by Messrs. Cassell and Co., has been brought up to date by Dr. Carlton Oldfield, honorary obstetric surgeon to the Leeds General Infirmary. Some enlargement has been found necessary and many new illustrations have been added.

FOUR lectures on the Animal Parasites affecting Man and the Diseases caused by Them will be delivered by Sir Robert Armstrong-Jones, at Gresham College, Basinghall-street, London, E.C., at 6 P.M., on Tuesday, Jan. 20th, and the three following days. Admission will be free and the lectures on Jan. 21st and 22nd will be illustrated by lantern slides.

ROYAL MICROSCOPICAL SOCIETY.—The annual meeting of the society will be held at 20, Hanover-square, London, W., on Wednesday next, Jan. 21st, at 8 P.M., to receive the annual report of the council and for the election of council and officers for the ensuing year. Mr. J. E. Barnard, the President, will deliver his address on the Present Status of Microscopy.

A STATE MEDICAL SERVICE.—The members of the Marylebone Division of the British Medical Association will discuss to-day (Friday, Jan. 16th), at 5 P.M., at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, "The Future of the Medical Profession under a Salaried, Whole-time State Medical Service." The chair will be taken by Dr. C. O. Hawthorne, and the discussion will be opened by Professor Benjamin Moore, M.D., D.Sc., F.R.S. (of the State Medical Service Association), and Sir Wilmot Herringham, K.C.M.G., C.B.

PEOPLE'S LEAGUE OF HEALTH.—The supporters of the People's League of Health meet at Claridge's Hotel, Brook-street, W., on Tuesday next, Jan. 20th, at 3 P.M., to discuss and further the objects of the League. Among the speakers will be Miss Olga Nethersole, the original founder and honorary organiser of the League; Sir Alfred Fripp, K.C.V.O.; Mr. E. B. Turner, F.R.C.S., chairman of the Medical Committee of the National Council for Combating Venereal Disease; Miss Damer Dawson, O.B.E., chief officer of the Women's Police Service; and Mrs. Bramwell Booth. Lord Burnham will take the chair.

HIGH BIRTH-RATE IN NORWICH.—One of the results of the end of the war, due, of course, to the return of the soldiers, is manifested in the increasing birth-rate. There were 88 births registered in Norwich in the first week of January, corresponding to an annual rate of 37·8 per 1000, as compared with a rate of 12 per 1000 in the same period last year. The deaths at all ages during the week in question amounted to 35, corresponding to an annual death-rate of 15 per 1000, as compared with a rate of 19·3 per 1000 last year. If this satisfactory balance exists and can be maintained all over the kingdom, there should be no fear of any material decrease in our population.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—A quarterly meeting of the Council was held on Jan. 8th, Sir George H. Makins, the President, being in the chair.—Mr. Herbert S. Pendlebury was introduced, and having made a declaration in the terms of the oath prescribed by the Charter of 1800, was admitted a Member of the Court of Examiners.—The President reported that Sir Charters J. Symonds had consented to deliver the next Hunterian oration, and accordingly he declared him to be appointed Hunterian Orator for 1921.—The President reported that Mr. John Murray's term of office on the Court of Examiners would expire on Feb. 11th, and that the vacancy thus occasioned would be filled up at the Council meeting on Feb. 12th. Mr. Murray is eligible for re-election.—The President reported that no essay for the Jacksonian prize had been received.—The thanks of the Council were given to Mr. E. Muirhead Little for presenting to the museum a collection of skiagrams and photographs illustrating the pathology of stumps. The Council proceeded to the consideration of the report of the Committee on the annual report of the Council regarding the proceedings at the annual meeting of Fellows and Members in November. It was decided to appoint a committee to consider the question of the representation of Members on the Council.—Sir Charters J. Symonds was nominated a representative of the College on the Council of Queen Victoria's Jubilee Institute for Nurses for a period of three years from March 1st, 1920.—A letter was read from Sir D'Arcy Power, reporting his attendance as the representative of the College at the annual meeting of the Court of the University of Sheffield.—A letter was read from Mr. J. Herbert Parsons and Mr. M. S. Mayou, forwarding a copy of a memorandum drawn up by the Committee appointed by the Commissioner of Police of the Metropolis to consider the question of standards of sight requisite for licensed vehicle drivers, upon which Committee they were nominated by the College to serve.

KENT LOCAL MEDICAL AND PANEL COMMITTEES.—We have received from Messrs. Larking and Larking, clerks to the Committees, copies of circular letters sent out to panel practitioners in Kent. The letter, dated Jan. 10th, and signed by Dr. Frank Coke, medical secretary, requests the practitioner to sign an enclosed resignation from the Kent panel list, giving the usual statutory six weeks' notice. "Our negotiations with the Kent Insurance Committee enabled us," the letter runs, "to agree upon terms which we should have had no hesitation in advising practitioners to accept," but "the wishes of both the Kent Insurance Committee and of our Committees have been entirely ignored and overruled by the Ministry of Health." The letter was the outcome of a meeting of the Local Medical and Panel Committees held on Jan. 7th, when the following resolution was passed, 26 of those present voting for it and 1 abstaining:—

"That the secretary be instructed to put into operation forthwith the Kent scheme of organisation for refusal of services under the Insurance Acts until the terms of service offered are satisfactory, and especially as a protest against (1) the legal disabilities; (2) the depreciation of capital value of practices; and (3) the hampering of efficient medical practice entailed by the New Regulation."

The chief provisions of the scheme referred to are as follows:—

Firstly, that in no circumstances is there to be any refusal of treatment to any sick person. Secondly, that resignations are to be collected and placed in the hands of your Committees, but are not to be used until after a ballot of all those resigning. Thirdly, that previous to the final ballot being taken, a clear statement of all the facts with the names of those resigning shall be sent to all panel practitioners in each area. Finally, that in no case are resignations to be used unless your Committees are confident that they have sufficient resignations in any particular place or small district to affect the purpose at issue.

The letter concludes thus: "The capitation fee has not yet been fixed. Nevertheless, if the practitioner has not, by the middle of February, definitely notified his resignation from the panel, he will be held to have accepted both the new regulations and the old, and they will come into force on April 1st."

A COMPLIMENTARY luncheon is to be given to Sir Henry Gauvain by friends who wish to mark the honour recently conferred upon him in recognition of his work for the Cripples' Hospital and College at Alton. Sir William Treloar will preside.

ST. MARY'S HOSPITAL MEDICAL SCHOOL DINNER.—The annual dinner of the St. Mary's Hospital Medical School, postponed from last October, was held at the Connaught Rooms on Jan. 9th. Sir Almroth Wright was in the chair and some 150 past and present students attended. Among the guests present were Sir John Goodwin, Sir Bertrand Dawson, as he was styled, Sir Humphry Rolleston, Sir John MacAlister, and Sir StClair Thomson. It was the first dinner held since 1913 and was therefore even more in the nature of a reunion than usual; the shadow of the war was reflected in the speeches of the chairman and Sir John Broadbent, dean of the school, while Sir John Goodwin referred in glowing terms to the services of St. Mary's men in every theatre of war. In replying to the toast of "The Medical School," the dean spoke optimistically of its present position and future prospects. The school had been thrown open on equal terms to men and women, an experiment which had proved a success. The lack of adequate class-room and laboratory accommodation was being felt severely, and steps were being taken to improve the medical school buildings. Important advances had been made in the scientific work of the hospital; the various departments of pathology and bacteriology had been amalgamated to form one Institute of Pathology under the general direction of Sir Almroth Wright, and the heads of the various departments were being put upon the staff of the hospital. A scheme had been drawn up to establish teaching and research units in medicine and surgery, and to this end an affiliation had been carried out with the Paddington Green Children's Hospital, the Maida Vale Hospital for Nervous Diseases, and the Paddington Infirmary, so that the teaching facilities offered by these institutions were now available for St. Mary's students. This affiliation, quite apart from the opportunities it gave for the study of neurology and children's diseases, provided nearly 1000 beds for clinical teaching, and, in conjunction with the opportunities for scientific teaching and research given by the new Institute of Pathology, should establish St. Mary's as one of the most important institutions for medical education in London. Sir Bertrand Dawson paid a tribute to Sir Almroth Wright's scientific achievements, and in the course of his speech pointed out that the medical profession now occupied a more important position in the general community than ever before. He made an appeal to medical men to cease from worrying about detail and to concentrate on broad principles of work and policy.

THE new headquarters of the British Dental Association at 23, Russell-square, London, W.C., will be opened by Dr. Addison, the Minister of Health, on Friday next, Jan. 23rd, at 3.15 P.M.

THE annual dance of the University College Hospital Medical Society will be held at Princes Galleries on Wednesday, Feb. 11th, at 9 P.M. Tickets (£1 1s.) may be obtained from the Secretary.

CHELTENHAM REUNION DINNER.—A reunion dinner of the medical men of Cheltenham and district who had served with the R.A.M.C. was held on Jan. 10th at the Lansdown Hotel. Dr. J. Rupert Collins was in the chair, and among those present were Dr. Braine-Hartnell, Dr. Barret Cardew, Dr. Sanderson Clow, Dr. D. Clow, Dr. Conder, Dr. Cox, Dr. Lidderdale, Dr. Longridge, Dr. Macfie, Dr. Meyrick-Jones, Dr. Moore, Dr. O'Leary, Dr. Park, Dr. Peake, Dr. Pearson, Dr. Allman Powell, Dr. H. Powell, and Dr. Curtis Webb. The usual toasts were duly honoured and a most enjoyable evening was passed. It was unanimously decided that the dinner should be made an annual one.

GREAT NORTHERN CENTRAL HOSPITAL.—The King's concert for the patients of the Great Northern Central Hospital, Holloway, was held in the Islington Victoria Ward on Jan. 13th. The arrangements were made by the Ladies' Association of the Institution, the artists being Misses Lily Clare and May Windsor, Messrs. Rex Howard, Charles Conyers, and Norman Long. Lord Northampton, chairman of the hospital, expressed the thanks of the committee of management for the Royal interest in the institution, and mentioned that the expenses of the concert were being defrayed by the King. It was resolved to send the following telegram to His Majesty at Sandringham:—

"The patients of the Great Northern Central Hospital humbly thank Your Majesty for the excellent entertainment provided this evening, and offer their humble duty on the occasion."

ST. THOMAS'S HOSPITAL OLD STUDENTS' DINNER.—At the annual dinner held after a break of five years, nearly 200 past students foregathered at the Connaught Rooms, London, to renew old friendships and to do honour to Sir George Makins, President of the Royal College of Surgeons, who occupied the chair. After the chairman had proposed success to the Hospital and Medical School in a few well-chosen words, dwelling on the exploits of the past and the hopes of the future, Sir Arthur Stanley replied, as the treasurer of two years' standing. Whatever the fate of the voluntary hospitals was to be, he intended that St. Thomas's should have a good run for its money, or, as Dr. Addison suggested later, for other people's money. Sir Cuthbert Wallace, who responded as dean of the Medical School, after enumerating the many honours gained by St. Thomas's men during the war, spoke with enthusiasm of the introduction of the professorial system into the school, the facilities for research which attended it, and the opportunity it offered of breaking down the inveterate insularity of the metropolitan medical schools. The war memorial was to take the form of a hostel designed to aid the collegiate life of the school. St. Thomas's, he suggested, might well be more conscious of its own worth and of the lamp which had been kept burning for a thousand years or more in Bermondsey and Southwark. Dr. Addison said that it did not pass the wit of man to devise some scheme whereby the State might help and receive help from the voluntary hospitals without destroying their character, and he did not fear for the finance of St. Thomas's in the hands of its determined, enlightened, and ruthless treasurer. He put in a special plea for scientific and laboratory equipment, and a proper payment of the expert staff. The evening closed with the proposal of the chairman's health by Mr. Samuel Osborn and the ovation which followed.

HOSPITAL ACCOMMODATION IN BIRMINGHAM.—A novel proposal concerning the organisation of hospitals administered by boards of guardians is being considered. Members of the Birmingham board of guardians have met members of the General and Queen's Hospitals to discuss proposals with regard to the future use of the Dudley Road and Selly Oak Infirmaries. The former building, with 1200 beds, was until recently the 2/1st Southern General Hospital and is now available again for civilian use. It is not anticipated that the whole of the accommodation at these two buildings, totalling 1650 beds, will be required for the purpose of a Poor-law infirmary, and a scheme of reconstruction applicable to post-war conditions is under consideration. At present there are more than 1000 patients on the waiting lists of the voluntary hospitals, and it is possible that such accommodation for medical and surgical patients may be made in the infirmaries as will relieve the pressure on the other hospitals. Such a proposal must necessarily have important bearings upon the future of voluntary hospitals and raise difficult questions such as the payment of medical staffs.

BRITISH FEDERATION OF MEDICAL AND ALLIED SOCIETIES.—Dr. Addison, Minister of Health, will receive a deputation from the Federation at 11.30 A.M. on Friday next, Jan. 23rd. The deputation desires to place before him certain aspects of the larger questions of the provision of efficient medical services for the community, and will be introduced by Sir W. Watson Cheyne, Bart., M.P., who will be accompanied by other medical Members of Parliament.

A thanksgiving service for the passing of the Nurses Registration Acts will, by the kindness of the Vicar, the Rev. H. R. L. Sheppard, be held at St. Martin's-in-the-Fields, on Friday next, Jan. 23rd, at 7.15 P.M. An address will be delivered by the Rev. A. H. R. Robinson, Mus. B. (Precentor), and during the singing of the hymn which follows an offertory will be collected. After defraying the expenses of the service the balance of the money will be given to the Trained Nurses Annuity Fund.

# The Services.

## ARMY MEDICAL SERVICE.

Major-Gen. H. Carr retires on retired pay.

Colonels from the half-pay list retiring on retired pay: G. T. Rawnsley, T. B. Beach.

Temp. Col. Sir H. J. Stiles (Bt. Lieut.-Col., R.A.M.C., T.F.) relinquishes his temporary commission on re-posting.

## ROYAL ARMY MEDICAL CORPS.

Major F. E. Rowan-Robinson relinquishes the acting rank of Lieutenant-Colonel.

Temp. Major C. E. Ligertwood relinquishes the temporary rank of Lieutenant-Colonel on re-posting.

Capt. L. C. Hayes to be temporary Major whilst specially employed.

The undermentioned Captains relinquish the acting rank of Major: W. T. Hare, E. C. Lambkin, J. S. McCombe.

Capt. and Bt. Major J. D. Kidd to be acting Major.

Capt. P. H. Wells resigns his commission.

L. C. E. Murphy, late temporary Captain, to be temporary Captain.

Officers relinquishing their commissions:—Temporary Captains granted the rank of Major: D. C. Ogilvie, J. F. Davidson, R. B. Roe, F. H. Moxon, R. S. S. Statham, E. T. C. Milligan, J. W. McKinney, R. Jamison. Temporary Captains retaining the rank of Captain: C. Harris, A. C. MacKay, J. R. Stott, C. W. Macpherson, M. Sommerville, H. N. Crossley, W. A. Alexander, R. N. Thomson, W. Campbell, J. G. Lessey, M. Rust, T. M. Anderson, S. C. R. Flaxman, W. J. Symes, C. F. Davey, C. C. Harrison, A. G. Howson, J. F. Penman, M. H. Watney, A. P. Green, P. J. Montgomery, E. D. F. Hayes, C. Murphy, E. T. Jameson, E. G. D. Murray, R. R. K. Paton, C. A. O'Driscoll, K. D. Falconer, A. Gaston, W. J. Moir, A. R. H. Geyer, R. W. Miller, C. J. C. Macquarie, H. B. McCaskie, D. R. Adams. Temp. Lieut. J. A. Martin (retains the rank of Lieutenant).

### SPECIAL RESERVE OF OFFICERS.

Capt. A. G. McColl relinquishes his commission and retains the rank of Captain.

Lieut. A. B. Grant to be Captain.

### TERRITORIAL FORCE.

Capt. (acting Lieut.-Col.) H. N. Barnett relinquishes the acting rank of Lieutenant-Colonel on ceasing to be specially employed.

Capts. (acting Majors) G. B. Eadie, N. W. Kidston, and K. I. S. Smith relinquish the acting rank of Major on ceasing to be specially employed.

Capt. V. T. Ellwood is restored to the establishment.

Lieut. (temp. Capt.) W. L. H. Duckworth ceases to serve with the Cambridge University Contingent (Medical Unit), Senior Division, and relinquishes the temporary rank of Captain.

2nd Eastern General Hospital: Major F. G. Bushnell is restored to the establishment.

## ROYAL AIR FORCE.

*Medical Branch.*—Flying Officers to be Flight Lieutenants: D. Cromie, J. B. Barnett, C. H. Young.

Squadron Leader E. G. R. Lithgow (Major, R.A.M.C.) relinquishes his temporary R.A.F. commission on return to Army duty.

Wing Commander J. St. J. Murphy (Surgeon Commander, R.N.) and Flight Lieut. E. Hefferman (Surgeon Lieutenant, R.N.) relinquish their temporary R.A.F. commissions on return to Naval duty.

The undermentioned are transferred to the unemployed list: Capts. J. Paxton, J. R. Adam, J. H. Cooke, A. B. Rooke, J. S. Dockrill; Lieut. J. Gorsky.

## INDIA AND THE INDIAN MEDICAL SERVICE.

The following are appointed to civil employment from military duty: Major and Bt. Lieut.-Col. M. Mackelvie to be Civil Surgeon. Major H. B. Foster, Civil Surgeon. Major H. B. Steen, Civil Surgeon, but will continue to act as Surgeon Superintendent of the Presidency General Hospital, Calcutta. Major O. St. John Moss, Civil Surgeon, but will continue to hold his present appointment. Major F. A. F. Barnado, Civil Surgeon. Major R. E. Lloyd, Civil Surgeon. Lieut.-Col. W. H. E. Woodwright, Officiating Inspector-General, Civil Hospitals, Bengal, on being relieved reverts to Civil Surgeon, Bareilly. Capt. R. V. Clarke, R.A.M.C., has been appointed to hold Civil Medical Charge of Roorkee, in addition to his own duties. Major R. Kelsall is posted permanently under Burma Government. Miss Anne Siret to be Obstetric House Surgeon, King George's Medical College, Lucknow, as a temporary measure, vice Miss M. E. Glancy granted leave. The following officers have reverted to the Civil Department: Lieut.-Col. F. H. Watling and Major O. Berkeley Hill to Bihar and Orissa; Major H. A. Williams and Major J. Good to Burma; Major G. Fowler to the Central Provinces; Lieut.-Col. J. H. Hugo to Foreign and Political Department; Major W. S. Patton to Madras; Major S. R. Christophers to Central Research Institute, Kasauli; Lieut.-Col. B. R. Chatterton to Bihar and Orissa; Lieut.-Col. J. W. Grant and Lieut.-Col. L. J. M. Deas to Foreign and Political Department; Lieut.-Col. C. A. Gill to the Punjab; Major C. E. Palmers and Major J. E. Clements to the United Provinces; Lieut.-Col. H. Burden, Chief Medical Officer, Baluchistan, has been given one year's leave; Lieut.-Col. M. Curry to be Superintendent of the District Jail, Ferozepore; Lieut.-Col. H. Smith, C.I.E., Civil Surgeon, is posted to Amritzar on return from leave.

## COMMISSIONS IN THE ARMY FOR DENTISTS.

The War Office is asking for the services of dental practitioners, including those who have already served, who are desirous of undertaking duty with the Army. Candidates with not less than a year's previous service will be commissioned to the rank of Captain, all others as Lieutenant. The term of engagement will be for 12 months or until no longer required, and the pay will be £600 per annum for Captains and £550 for Lieutenants, together with free rations, travelling allowances and expenses, kit, and outfit allowance of £30 if joining for the first time, and additional pay of £50 per annum when serving outside Europe. Candidates, who must be fit for service at home or abroad, should apply to the Secretary, War Office, A.M.D. (1), Cornwall House, Stamford-street, S.E. 1.

## Communications, Letters, &c., to the Editor have been received from—

A.—Dr. F. S. Arnold, Berkhamsted; Sir R. Armstrong-Jones, Lond.

B.—Mr. F. Breckin, Cheam; Dr. J. Blomfield, Lond.; Board of Education, Lond.; Dr. H. S. Banks, Motherwell; British Federation of Medical and Allied Societies, Lond., Gen. Sec. of; Sir A. Bowlby, Lond.; Prof. A. E. Boycott, Lond.; Dr. N. Barnett, Bath; Dr. G. F. Barham, Woodford Green.

C.—Dr. E. L. Collis, Cardiff; Sir John Collie, Lond.; Mr. A. L. Candler, Exeter; Mr. H. Chaffer, Eastbourne; Cremation Society of England, Lond.; Messrs. Cassell and Co., Lond.; Dr. C. Chidell, Folkestone; Chicago School of Sanitary Instruction.

D.—Dr. G. H. Dart, Lond.; Dr. T. V. Dickinson, Ellel Grange; Messrs. Down Bros., Lond.; Dr. F. Dévé, Rouen; Messrs. W. Dawson and Sons, Lond.; Mr. E. M. Davies, Rochdale; Prof. L. Doncaster, Liverpool; Dr. H. G. Dixon, Lond.

E.—Prof. Dr. Engel, Dortmund; Dr. W. A. Evans, Keighley; Miss E. Evans, M.B., Cardiff.

F.—Factories, Chief Inspector of, Lond.

G.—Great Northern Central Hospital, Lond., Sec. of; Mrs. Grieve, Chalfont St. Peter.

H.—Mr. H. W. Holman, Lond.; Mr. E. Hindle, Cairo; Mr. H. T. Hicks, Derby; Dr. Houdart, Ile de Bréhat; Hunterian Society, Lond.; Mr. W. W. Hardwicke, Lond.; Mr. L. G. H. Horton-Smith, Lond.

K.—Dr. D. Keilin, Cambridge; Mr. G. A. King, Croydon; Dr. D. Knocker, Lond.

L.—Dr. R. J. Lee, West Drayton; League of Red Cross Societies, Geneva; Mr. V. W. Low, Lond.

M.—Ministry of Health, Lond.; Dr. J. A. C. Macewen, Lond.; Miss H. M. M. Mackay, Lond.; Dr. J. A. Murray, Lond.; Dr. W. A. Muir, Wallasey; Dr. Reginald Morton, Lond.

N.—Dr. J. T. Neech, Halifax; Newcastle-on-Tyne, Tuberculosis Medical Officer; National Safety Council, Chicago.

O.—Dr. C. M. O'Brien, Dublin.

P.—Dr. D. S. Page, Lond.; Dr. A. G. Phear, Lond.

R.—Mr. S. C. Banner, Lond.; Dr. W. T. Ritchie, Edinburgh; Royal Mail Steam Packet Co., Lond.; Röntgen Society, Hon. Treasurer of; Royal Institute of Public Health, Lond.

S.—Sir Arthur Stanley, Lond.; *Surbiton Times*, Editor of; Dr. W. D. Sutherland, Calcutta; Dr. C. F. Sonntag, Lond.; Dr. C. Slater, Tunbridge Wells; Mr. F. B. Shawe, Fulneck; Scientific and Industrial Research Dept., Lond.

T.—Mr. C. W. J. Tennant, Lond.

W.—Mr. R. L. M. Wallis, Lond.; Dr. A. C. Wilson, Formby; War Office Publicity Dept., Lond.; Welfare Workers' Institute, Lond., Gen. Sec. of.

Communications relating to editorial business should be addressed exclusively to the Editor of THE LANCET, 423, Strand, W.C. 2.

# Medical Diary.

## SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY, Jan. 22nd.—3.30 P.M., Special General Meeting, the Prince of Wales having expressed his intention to attend for admission into the Society.—4.30 P.M., Ordinary Meeting. Papers (among others):—Mr. S. Marsh: On Alternating Current Electrolysis (communicated by Prof. E. H. Griffiths).—Mr. S. D. Carothers: Plane Strain. The Direct Determination of Stress (communicated by Prof. A. E. H. Love.)—Mr. F. Horton and Ann C. Davies: An Investigation of the Effects of Electron Collisions with Platinum and with Hydrogen, to ascertain whether the Production of Ionisation from Platinum is due to Occluded Hydrogen (communicated by Mr. C. T. R. Wilson).

**ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.**

**Tuesday, Jan. 20th.**

SPECIAL GENERAL MEETING OF FELLOWS: at 5 P.M.

To consider, and if approved to confirm, proposal by the Council that the following new By-law be enacted, viz.:—

"In view of certain anomalies and consequent hardships to Fellows and Members of Sections arising out of conditions resulting from the War, the Council is authorised to deal with all such questions at its discretion, the provisions of other By-laws notwithstanding, but such special power shall be limited to a fixed period, namely, from 1st January to the 31st December, 1920. If at the end of that period it shall seem desirable or necessary to continue the powers hereby granted they may be continued for another period not exceeding six months by vote of three-fourths of the Members of the Council present and voting at such Meeting of the Council called for the purpose of considering the question. At the end of the period or periods fixed, it shall be lawful to omit this temporary By-law from the By-laws of the Society."

To be followed immediately by a

GENERAL MEETING OF FELLOWS:

Ballot for Election to the Fellowship. (Names already circulated.)

**Wednesday, Jan. 21st.**

OCCASIONAL LECTURE: at 5 P.M.

Surgeon-Commander K. Digby Bell, R.N.: The Position of the Medical Profession with Regard to National Physical Education.

*MEETINGS OF SECTIONS.*

**Tuesday, Jan. 20th.**

THERAPEUTICS AND PHARMACOLOGY (Hon. Secretaries—Philip Hamill, Douglas Cow); at 4.30 P.M.

*Discussion:*

On "The Therapeutic Uses of Oxygen," to be opened by Mr. J. Barcroft, C.B.E., F.R.S.

Colonel Cummins, C.B., C.M.G., Dr. C. G. Douglas, Dr. J. S. Haldane, F.R.S., Dr. P. Hamill, Dr. G. H. Hunt, Dr. R. H. Peters, Dr. Ryle, Dr. F. Shufflebotham and Dr. G. H. Sowry will also speak.

PATHOLOGY (Hon. Secretaries—J. A. Murray, Cecil Price-Jones); at 8.30 P.M., to be held at the Imperial Cancer Research Laboratories, 8, Queen-square, W.C.1.

Mr. W. H. Woglom: Industrial and Experimental Pitch Warts.

Mr. A. H. Drew: Oxidation Process in Normal Tissues and Cancer.

Mr. W. E. Gye and Dr. B. R. G. Russell: Conditions of Survival of Tumour Cells *in vitro*.

Dr. W. Cramer: Action of Uranium Salts on Tumour Cells.

Dr. J. A. Murray: Return-autologous Grafting of Tumours after Transplantation in Normal Animals.

**Friday, Jan. 23rd.**

STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—E. A. Cockayne, H. C. Cameron, C. P. Lapage): at 4.30 P.M.

*Exhibition of Cases.*

EPIDEMIOLOGY AND STATE MEDICINE (Hon. Secretaries—William Butler, M. Greenwood): at 8.30 P.M.

*Papers:*

Dr. F. G. Crookshank: Principles of Epidemiology.

Dr. Cleland and Dr. Campbell: Epidemiology of Acute Encephalomyelitis.

Dinner will be provided at the Welbeck Palace Hotel at 7 P.M. (price 7*s.* 6*d.*). It is specially requested that those intending to dine will send names to Dr. M. Greenwood, Lister Institute, Chelsea, S.W.1, not later than Wednesday, Jan. 21st.

---

TUBERCULOSIS SOCIETY, at the Rooms of the Medical Society, 11, Chandos-street, Cavendish-square, W.

MONDAY, Jan. 19th.—8 P.M., Paper:—Dr. Gauvain: Surgical Tuberculosis from the Point of View of the Tuberculosis Officer. Followed by a discussion. Ordinary Business Meeting of the Society will follow.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY, Jan. 20th.—4.30 P.M., Pathological Specimens. Cases sent for Consultation. Clinical Cases will be shown by Dr. J. L. Bunch, Dr. W. Griffith, Dr. E. J. D. Mitchell, Dr. S. Kapoor, Dr. Eva White, Dr. D. Vinrace, The President, Dr. W. K. Sibley, and Dr. P. J. Edmunds.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

WEDNESDAY, Jan. 21st.—4.30 P.M., Paper:—Mr. A. H. Powell: Ancient Cottages and Modern Requirements.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY, Jan. 21st.—8 P.M., Annual Meeting. Annual Report of Council and Election of Council and Officers for the ensuing year. Presidential Address:—Mr. J. E. Barnard: The Present Status of Microscopy.

HARVEIAN SOCIETY, at the Medical Society's Rooms, 11, Chandos-street, Cavendish-square, W.

THURSDAY, Jan. 22nd.—8.15 P.M., Annual General Meeting.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

Six Hunterian Lectures on John Hunter's Observations and Discoveries in Anatomy and Surgery (illustrated by his specimens and preparations).

MONDAY, Jan. 19th.—5 P.M., Prof. A. Keith: I., His Contributions to Our Knowledge of the Heart and Blood-vessels.

WEDNESDAY.—5 P.M., Prof. A. Keith: II., His Contributions to Our Knowledge of the Lungs and Pleuræ.

FRIDAY.—5 P.M., Prof. A. Keith: III., His Contributions to Our Knowledge of the Alimentary System.

UNIVERSITY OF LONDON.

Advanced Lectures in Physiology to Students of the University and others interested in the subject.

A Course of Eight Lectures on the Regulation of Respiration will be given by Dr. M. S. Pembrey and Mr. J. H. Ryffel at Guy's Hospital, Borough, S.E.

THURSDAY, Jan. 22nd.—4.30 P.M., Lecture III.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), Mile End, E.

A Course of Instruction on the Diseases of Children, open to Post-Graduates and to Students of the Hospital. (The lectures will be illustrated by lantern slides.)

MONDAY, Jan. 19th.—9.15 A.M., Lecture II.:—Dr. Thompson: Organic and Functional Nervous Diseases, Meningitis and Mental Deficiency. (At the Anatomical Theatre.)

WEDNESDAY.—10 A.M., Clinical Demonstration:—Dr. Miller. (At the Children's Out-patient Department.)

SATURDAY.—10.15 A.M., Lecture III., Dr. Hutchison: General Diseases. (At the Anatomical Theatre.)

NATIONAL HOSPITAL FOR DISEASES OF THE HEART POST-GRADUATE COURSE, Westmoreland-street, W.

MONDAY, Jan. 19th.—11 A.M., Out-patients: Dr. Goodall. 2 P.M. In-patients: Dr. Moon.

TUESDAY.—2 P.M., Out-patients: Dr. R. Wells. 3 P.M., In-patients: Dr. Gibbes.

WEDNESDAY.—2 P.M., Out-patients: Dr. Moon. 5.30 P.M., Lecture:—Dr. R. Wells: Aortic Disease.

THURSDAY.—10 A.M., In-patients: Dr. Hamill: 2 P.M., Out-patients: Dr. Price.

FRIDAY.—2 P.M., Out-patients: Dr. Gibbes. 2.30 P.M., In-patients: Dr. Wells.

SATURDAY.—10.30 A.M., In-patients: Dr. Hamill.

ROYAL INSTITUTE OF PUBLIC HEALTH, at Poplar Dispensary for the Prevention of Consumption, 135, Bow-road, E.

Special Course of Lectures and Demonstrations on Tuberculosis for Medical Men and Women qualifying to become Tuberculosis Officers, General Practitioners, and others. Bacteriological Demonstrations will be given in the Laboratories of the Institute, and visits arranged to Sanatoriums, Tuberculosis Dispensaries, &c.

THURSDAY, Jan. 22nd.—5 P.M., Lecture II.:—Dr. T. D. Lister: A Practical Demonstration of the Work of a Tuberculosis Department at Poplar.

GRESHAM COLLEGE, Basinghall-street, E.C.

TUESDAY, Jan. 20th, WEDNESDAY, THURSDAY AND FRIDAY.—6 P.M., Lectures:—Sir Robert Armstrong-Jones: The Animal Parasites affecting Man, and the Diseases caused by them (illustrated by lantern slides).

UNIVERSITY OF SHEFFIELD—FACULTY OF MEDICINE POST-GRADUATE DEMONSTRATIONS, at the Sheffield Royal Hospital.

MONDAY, Jan. 19th.—3.30 P.M., Dr. Nutt: Demonstration of X Ray Apparatus.

TUESDAY.—4 P.M., Dr. Hay: Methods of Examination of Eye.

WEDNESDAY.—3.30 P.M., Dr. Wilkinson: Common Forms of Sore Throat.

THURSDAY.—3.30 P.M., Dr. Skinner: General Considerations in Dermatology.

FRIDAY.—4 P.M., Dr. Hay: Methods of Examination of Eye (continued).

UNIVERSITY OF BIRMINGHAM—FACULTY OF MEDICINE, in the Anatomical Theatre, Edmund-street, Birmingham.

Post-Graduate Course of Lectures on Venereal Disease:—

WEDNESDAY, Jan. 21st.—4.15 P.M., Mr. B. Ward: Gonorrhœa in the Male. (Lecture I.)

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.

TUESDAY, Jan. 20th.—4.30 P.M., Lecture:—Dr. A. Ramsbottom: Chorea.

---

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, W.C.1.

MEDICAL SCHOOL.

MONDAY, Jan. 26th.—2–3.30 P.M., Out-patient Clinic: Dr. Collier. 3.30 P.M., Dr. S. A. Kinnier Wilson: Examination of Nervous System and Interpretation of Physical Signs. III.

TUESDAY, Jan. 27th.—2–3.30 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Ward Cases: Dr. Risien Russell.

WEDNESDAY, Jan. 28th.—2 P.M., Mr. Scott: Auditory Vertigo and Forced Movements. 3.30 P.M., Dr. Greenfield: Pathological Demonstration.

THURSDAY, Jan. 29th.—2–3.30 P.M., Out-patient Clinic: Dr. Farquhar Buzzard. 3.30 P.M., Dr. S. A. Kinnier Wilson: Examination of Nervous System and Interpretation of Physical Signs. IV.

FRIDAY, Jan. 30th.—2–3.30 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Ward Cases: Dr. Tooth.

SATURDAY, Jan. 31st.—9 A.M., Surgical Operations.

Fee for Post-Graduate Course £7 7*s.* C. M. HINDS HOWELL, Dean.

# Appointments.

EVERETT, H. F., L.R.C.P. & S. Edin., L.F.P.S.G., has been appointed Certifying Surgeon under the Factory and Workshop Acts for Hadleigh.

HUTT, C. V., M.D., B.C. Camb., D.P.H. Oxon., Medical Officer of Health for Richmond, Surrey.

KADINSKY, Z. S., M.R.C.S., L.R.C.P. Lond., Surgical Registrar to the Westminster Hospital.

SMITH, EDWIN, M.D. Lond., Barrister-at-law, Deputy Coroner for Westminster and S.W. London District.

# Vacancies.

*For further information refer to the advertisement columns.*

*Bedford County Hospital.*—H.S. and H.P. £175 and £150 respectively.
*Bermondsey Medical Mission for Women and Children.*—Female Res. Asst. M.O. £200.
*Birkenhead Borough Hospital.*—Two Hon. Asst. M.O.'s.
*Birkenhead Union.*—Asst. Res. M.O. £300.
*Birmingham Children's Hospital.*—P. to Out-patients and S.
*Birmingham City Mental Hospital, Rubery Hill, near Birmingham.*—First and Second Asst. M.O.'s. £500 and £400.
*Birmingham, City Fever Hospital, Little Bromwich.*—Asst. M.O. £300.
*Birmingham General Hospital.*—Clin. Path. £600.
*Bristol, Beach House Estate Sanatorium.*—Res. Supt. M.O. £800.
*Bristol Royal Infirmary.*—Clinical Pathologist. £250.
*Bristol University.*—Demonstrator of Path. £200.
*Bury Infirmary, Lancs.*—Jun. H.S. £150.
*Capetown, City of.*—Female Asst. to Health Dept. £650.
*Cape Town University, Faculty of Medicine.*—Chair of Bio-Chemistry. £800.
*Cardiff, King Edward VII. Hospital.*—H.S. and H.P. £200.
*Carlisle, Cumberland and Westmorland Mental Hospital, Garlands.*—Jun. Asst. M.O. £350.
*Derby, Derbyshire Royal Infirmary.*—H.P. £200.
*Derbyshire Education Committee.*—Sch. M.O. £500.
*Doncaster Royal Infirmary and Dispensary.*—Asst. H.S. £200–£225.
*Dorchester, Dorset County Council Education Committee.*—School Dentists. £400.
*Dudley, Guest Hospital and Eye Infirmary.*—Vacancy on Hon. Surg. Staff. Also two Hon. P.'s.
*Edinburgh, Scottish Board of Health.*—M.O.'s.
*Elizabeth Garrett Anderson Hospital, Euston-road.*—Jun. Asst. P., Path., Asst. Path. Also Clin. Asst. £1 1s. per attendance.
*Enham Village Centre, Andover, Hants.*—Asst. Med. Direct. £600–£700. Neuro. M.O., £350.
*Gilbert and Ellice Islands Colony and British Solomon Islands Protectorate.*—Sen. M.O.'s. £600 each.
*Gold Coast and Sierra Leone.*—Dent. S. £500.
*Great Northern Central Hospital, Holloway, London, N.*—Two P.'s. Also Dental S.
*Greenwich Union Infirmary, Vanbrugh Hill, East Greenwich, S.E.*—Asst. Med. Supt. £300.
*Hartlepool Union.*—Asst. Res. M.O. £350.
*Herefordshire General Hospital.*—H.S. £200.
*Hospital for Consumption and Diseases of the Chest, Brompton, S.W.*—H.P. 30 guineas.
*Hospital for Sick Children, Great Ormond-street, London, W.C.*—H.S. £50.
*Hull Royal Infirmary.*—H.P. £200.
*Kensington Tuberculosis Dispensary, 119, Ladbroke-grove, W.*—M.O. £500.
*King's College Hospital, Denmark-hill, S.E.*—M.O. to Gonorr. Dept.
*King's Lynn, West Norfolk and King's Lynn Hospital.*—H.S. £150.
*Leamington Spa, Borough of.*—M.O.H. £650.
*Lewes, East Sussex County Council Education Committee.*—Jun. Asst. Sch. M.O. £450.
*Lincoln County Hospital.*—Junior H.S. £200.
*Lindsey County Council.*—Asst. Tuberc. O. and Asst. Sch. M.O. £450.
*Liverpool, County Asylum, Rainhill.*—Asst. M.O.'s. £300.
*Liverpool Stanley Hospital.*—H.P. and S. £150 each.
*London Fever Hospital, Islington, N.*—Locum Tenens Asst. M.O £7 7s. per week.
*London Temperance Hospital, Hampstead-rd., N.W.*—Anæsth. 25 gns.
*Maidstone, West Kent General Hospital.*—H.P. £200.
*Manchester, Ancoats Hospital.*—H.P. £150.
*Manchester, Whitworth Park Hospital.*—H.S. £100.
*Metropolitan Hospital, Kingsland-road, E.*—Asst. P.
*Middlesbrough Education Committee.*—Asst. Sch. M.O. £500.
*Middlesex County Council.*—Temp. Tuberc. M.O. £600.
*Miller General Hospital for South-East London, Greenwich-road, S.E.*—Res. Cas. O. Also H.S. £100.
*Natal Provincial Administration.*—Med. Inspect. and Asst. Med. Inspect. of Schools. £800 and £600.
*Newcastle-upon-Tyne, Hospital for Sick Children.*—Junior Res. M.O. £200.
*Newcastle-upon-Tyne, Royal Victoria Infirmary.*—Medical and Hon. Surg. Registrars.
*New Zealand, Auckland Hospital.*—Bact. and Path. £900.
*Norwich City.*—Asst. M.O.H. £300.
*Paddington Green Children's Hospital, London, W.*—S. to Eye Dept., P. to Skin Dept., and P. to Out-patients.
*Plymouth, South Devon and East Cornwall Hospital.*—H.S. £200.
*Prince of Wales's General Hospital, Tottenham, N.*—Hon. Asst. P.
*Queen Mary's Hospital for the East End, Stratford, E.*—Hon. S.
*Royal Free Hospital, Gray's Inn-road, W.C.*—Asst. M.O.'s in Venereal Diseases (Female) Dept. £250 and £150 respectively. Female Res. Obst. O. (£150), Res. Obst. H.S. (£50), Res. Obst. Asst. (£150).
*St. Helens, Lancs, The Pilkington Special Hospital.*—Asst. £500.
*St. Mary's Hospital, Paddington.*—First Asst. Pathol. £500.
*Salford Royal Hospital.*—Cas. H.S. £150.
*Salisbury Municipality, Rhodesia, S.A.*—M.O.H. £600
*Scarborough Education Committee.*—Sch. Dent. S. £250.
*Seamen's Hospital Society, Hospital for Tropical Diseases, Endsleigh Gardens, N.W.*—Med. Supt. £400.
*Sheffield City Education Committee.*—Asst. Sch. M.O. £450. Sch. Dental S. £400.
*Sheffield Royal Infirmary.*—Asst. H.P. and H.S. £150 each.
*Sheffield University.*—Demonstrator in Path. and Bact.
*South London Hospital for Women, South Side, Clapham Common, S.W.*—Female H.S. £100. Female Clin. Assts.
*Stannington (Northumberland) Children's Sanatorium.*—Res Female M.O. £250.
*Straits Settlements.*—Res. M.O. £840.
*Straits Settlements and Federated Malay States.*—M.O.'s.
*Swansea County Borough.*—Asst. M.O.'s. £600 and £500.
*Swindon, Borough of.*—Asst. M.O.H. £500.
*University of London, South Kensington.*—External Examiners.
*Ventnor, Isle of Wight, Royal National Hospital for Consumption and Diseases of the Chest.*—Asst. Res. M.O. £300.
*Wakefield, Clayton Hospital.*—Jun. H.S. £150.
*Wakefield, West Riding County Council.*—School Oculist. £550.
*Westminster Hospital, Broad Sanctuary, S.W.*—Asst. P. Also Two Hon. Administrators of Anæsth.
*Whittingham County Asylum, Preston, Lancs.*—Asst. M.O. £420.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Abergele, Buckie, Castle Hedingham, Clogher, Hastings, Hoylake, Leicester (East), Leyland, Nelson, Northallerton, Okehampton, and Wakefield.

# Births, Marriages, and Deaths.

## BIRTHS.

BRUNTON.—On Jan. 12th, at Purey Cust Nursing Home, York, to Lucy M. Brunton, M.B., wife of G. L. Brunton, M.D.—a son.

DICK.—On Jan. 10th, at a nursing home, Sevenoaks, the wife of R. J. Dick, M.D., of a son.

READE.—On Jan. 12th, at 35, Criffel-avenue, Streatham-hill, S.W. 2, Violet Reade, M.R.C.S., L.R.C.P., wife of Arthur G. L. Reade, O.B.E., Surgeon-Lieutenant R.N.V.R., of a son.

## MARRIAGES.

WIRGMAN—STIVEN.—On Jan. 6th, at St. Mary Abbot's, Kensington, Charles Wynn Wirgman, M.D., F.R.C.S., to Beryl Annie Mabut Stiven, youngest daughter of the late E. W. F. Stiven, M.D., and Mrs. Stiven, of Inverness-gardens, W.

RELTON—SINTON.—On Jan. 8th, at the Parish Church, Harpenden, Charles Duncan Relton, M.B., B.S., Captain, R.A.M.C. (T.F.), to Grace Agnes, elder daughter of Mr. and Mrs. James Sinton, of Wynyates, Harpenden, Herts.

## DEATHS.

BERNAYS.—On Jan. 6th, suddenly, at the Royal Victoria Hospital, Dover, Charles Murchison Bernays, M.R.C.S., L.R.C.P. (late R.A.M.C.), aged 39.

DAUNT.—On Jan. 6th, at Hastings, Dr. Wm. Daunt, aged 51.

HAMERTON.—On Jan. 11th, at Russell-square, after four days' illness from pneumonia, George Albert Hamerton, M.D., F.R.C.S.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

## BOOKS, ETC., RECEIVED.

CONSTABLE AND CO., London.
Altitude and Health. By F. F. Roget. Pp. 186. 12s.

COPE AND FENWICK, London.
Colour and Health. A Symposium edited by the Rev. J. J. Pool. Pp. 163. 5s.

LEHMANN, J. F., Munich.
Grundzüge der Hygiene. By Dr. W. Prausnitz. Pp. 761. M.23.

URBAN AND SCHWARZENBERG, Berlin and Vienna.
Die Erhaltung des Kindeslebens in der Geburt. Von Prof. Dr. W. Benthin. Pp. 111. M.3.
Kurz gefasste Praktische Bakteriologie für Ärtze und Studierende. Von Dr. L. Paneth. Pp. 158. M.8.


**THE LANCET: SUBSCRIPTION RATES.**

| | | |
|---|---|---|
| INLAND | One Year ... ... ... ... | £1 16 0 |
| | Six Months ... ... ... ... | 0 18 0 |
| | Three Months ... ... ... ... | 0 9 0 |
| ABROAD | One Year ... ... ... ... | £2 0 0 |
| | Six Months ... ... ... ... | 1 0 0 |
| | Three Months ... ... ... ... | 0 10 0 |

Subscriptions may commence at any time, and are payable in advance. Cheques and P.O.'s (crossed "London County Westminster and Parr's Bank, Covent Garden Branch") should be made payable to Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C. 2

**ADVERTISEMENT RATES.**

Books and Publications ... ...
Official and General Announcements
Trade and Miscellaneous Advertisements ... ... ... ... ...
} Four Lines and under... ... 5s. 0d.

Every additional line, 1s.
Quarter Page, £2 10s. Half a Page, £5. Entire Page, £10.
Special Terms for Position Pages

Advertisements (to ensure insertion the same week, should be delivered at the Office not later than Wednesday) accompanied by a remittance.

# Notes, Short Comments, and Answers to Correspondents.

## TWO EAST-END HOSPITAL APPEALS.

THE Special Appeal Committee of the Queen's Hospital for Children, Hackney-road, E., points out that this hospital will be compelled to close two wards containing 62 beds within three months unless funds can be obtained to pay off the deficit. The closing of the wards would deprive 800 little invalids from the poorest parts of London of the medical and surgical treatment which is afforded annually. The appeal is signed by, among others, the Earl of Shaftesbury, the Duke of Newcastle, the Bishop of London, the Chief Rabbi, and Lord William Cecil. The institution is over £10,000 in debt, and an additional £5000 per annum is required if the hospital is to be kept at its pre-war standard. At least 40,000 mothers take their children there in sickness and accident during the year, the attendances in the casualty and out-patient departments numbering over 10,000, and the demands on the 170 beds are always most pressing. Cheques, which should be made payable to the Queen's Hospital for Children and crossed "Barclay's Bank," should be sent to the secretary at the hospital, Hackney-road, Bethnal Green, E.2.

At a "victory" dinner on behalf of Queen Mary's Hospital for the East End (incorporating the West Ham and Eastern General Hospital), held at Liverpool-street Hotel on Jan. 8th, the chairman, Mr. C. E. Leo Lyle, M.P., said that there was an immediate need for more beds. The local War Memorial Fund had provided £30,000 for extensions, but an increased annual income was needed for maintenance. A new nurses' home which was required would cost £30,000. A friend had given £10,000 for a maternity wing, but an additional £10,000 was required, together with a similar sum for extending the out-patient department. During the evening subscriptions were announced amounting to £5000 towards an appeal for £10,000 on behalf of the general fund.

## THE HUMAN BELLOWS.

A CORRESPONDENT writes calling our attention to the demand made upon private nurses by their patients to blow up air-cushions by applying their mouth to the valve, and suggests that this dirty and obviously dangerous habit has been forced upon nurses by the omission on the part of the makers of air-cushions to supply any means of inflating them. We entirely agree with our correspondent that no nurse should be asked to put her mouth directly to a valve which may have been soiled by the patient or infected by a previous blower. But we note that at least one instrument-maker supplies a small bellows for cushions and pillows, and houses must now be few and far between where a bicycle pump would not be available for the purpose. It is, of course, open to any nurse, who does not object in principle to act as a bellows, to use a piece of indiarubber-tubing as an adaptor, sterilising the tubing, or, at all events, keeping it for her own particular use.

## SURVIVAL OF QUADRUPLETS.

*To the Editor of* THE LANCET.

SIR,—Authentic instances of quadruplets being very rare (THE LANCET, Dec. 13th and 20th last), the case, as follows, which occurred in the practice of my late father—Dr. John Vinrace, of Birmingham—may be of interest. The mother was a primipara, aged 18, and single, and within about two hours gave birth to quadruplets at full time or nearly so. Two were born alive, but died within the day, and of the two born dead one was a monster (preserved in Queen's College, Birmingham). Subsequently the couple married and three or four normal pregnancies ensued, but no further plural birth.

I am, Sir, yours faithfully,

Gower-street, W.C., Jan. 13th, 1920. DENNIS VINRACE.

## METRIC PRESCRIBING.

*To the Editor of* THE LANCET.

SIR,—Please permit one who has had many years' experience in metric prescribing to offer a few suggestions to those who use or may contemplate using the same in lieu of the old and now obsolete imperial system.

(1) In prescribing, adopt the continental custom of placing the denomination instead of the decimal point between the integer and fraction. For instance, 8 g. 5 instead of 8·5 g., and 2 cg. 5 instead of 2·5 cg. By acting thus we write the amount as it is spoken. In decimal-using countries no one would say "eight point five grammes" any more than they would say "eight point five francs," but "eight grammes five" and "eight francs fifty."

(2) Fluid quantities under half a mil. are prescribed in drops.

(3) In dealing with small weights—i.e., under a gramme—the centigramme denomination will be generally found most convenient, and will not require so many figures as if expressed in grammes. But it is advisable to avoid, if possible, mixing grammes and centigrammes in the same prescription, as changing the denomination disturbs continuity of thought as conveyed by the vertical line of figures.

(4) Decigrammes and decimils. are only academical, and are not used in practice.

(5) It will be found more convenient to order 10 pills or powders rather than 12, as the calculations required can then be made by, mentally or otherwise, moving the point. But 12 may be ordered by the simple addition of a sixth to each quantity.

(6) For small doses, or where exactitude in dose is called for, as imperial equivalents, the gramme may be taken as 15½ grains, the millilitre (or c.cm.) as 17 minims (actually 16 min. 95). As metric equivalent the grain may be taken as 6 cg. 5 (actually 6 cg. 48). For larger doses, where a few grains more or less is of no consequence, the gramme and the mil. may be taken as equivalents. For very minute doses, as, for instance, for hypodermic use, to convert 1/10 and 1/100 to metric we move the point one or two places to the left; thus we get 0 cg. 65 and 0 cg. 065 (or, using the milligramme denomination, 6 mg. 5 and 0 mg. 65). Intermediate quantities are simply a matter of ordinary calculation.

(7) In prescribing a mixture for an adult, by taking the gramme and mil. as equivalent to 16 grains and 16 minims, which are near enough approximates, an 8-oz. bottle containing 16 doses suits our purpose, for by it we can transpose grains and minims to grammes and mils. at once, without any calculation. For instance, if we wish to order 10 gr. or 10 min. doses, in an 8-oz. mixture, we should prescribe 10 g. or 10 mils. respectively. In a 6-oz. mixture (of 12 doses) we should prescribe three-quarters of these amounts—namely, 7 g. 5 or 7 ml. 5, and for a 3-oz. mixture half, and so on from size to size. When prescribing for infants we choose a 2-oz. mixture of 56 mils. for the same reason because of its containing 16 teaspoonsful. If we wish to order, say, ½-min. doses of vin. ipec., we should prescribe for a 2-oz. mixture 8 drops.

(8) The approximate sizes of English bottles as at present made are: 1 oz. = 28 mils.; 2 oz. = 56 mils.; 3 oz. = 85 mils.; 4 oz. = 113 mils.; 6 oz. = 170 mils.; 8 oz. = 227 mils.; 10 oz. = 284 mils.; 12 oz. = 341 mils. These figures are given without their fractions, which, ranging from 5 to 10 drops, need only be treated as negligible quantities.

I am, Sir, yours faithfully,

W. WRIGHT HARDWICKE, M.D.

Coulson-street, S.W., Jan. 12th, 1920.

## WANTED—AN APPOINTMENT.

*To the Editor of* THE LANCET.

SIR,—Undoubtedly the subject of this letter might well be expected to make her wants known through the advertisement columns, but I am hoping that my knowledge of her circumstances will gain her the advantage of the insertion of this letter.

An Englishwoman, widow of an American physician, 42 years of age, highly educated in England and on the Continent, holding the best certificates in foreign languages, and speaking French, Italian, and German, requires a resident or non-resident appointment to assist a medical man in any way. She has literary experience, she has managed the business and secretarial side of her late husband's work, who was a specialist in nervous diseases, and she has excellent references.

I am, with anticipatory thanks,

Yours faithfully,

M.D.

---

THE United States Public Health Service have issued a notice that *B. tularense*, an organism isolated by McCoy and Chapin from rodents suffering from a disease resembling plague, also infects man. It has been found by Dr. Francis that "deer-fly fever," a disease which occurs in rural districts in Utah and which causes fever and inflammation of glands, is due to the organism.

WE are asked to state that the "Central Welfare Supervisors Association" no longer exists as such, but has amalgamated with two other welfare workers' societies to form the "Welfare Workers' Institute," of which the general secretary is Miss E. B. Voysey, B.A., and the address 11, Adam-street, London, W.C.2. A monthly magazine is to be issued by the institute dealing with all matters relating to industrial welfare.